

THE EVOLUTION OF THE URBAN HYBRID LANDSCAPE IN THE NEW CITIES IN EXPANSION

THE CASE OF RIO DE JANEIRO AND JOHANNESBURG



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Abstract

Il paesaggio urbano delle città nel sud del mondo è evoluto molto nell'ultimo secolo passando da città concepite e disegnate per i padroni coloniali, basate su principi europei di progettazione, a città con una tipologia più complessa. Il nuovo paesaggio urbano in queste città è caratterizzato da un insieme di fenomeni quali disuguaglianza economica e sociale, diversità culturale, ingiustizia nell'uso e accesso dello spazio urbano e dinamiche politiche che lasciano continuamente il loro segno sul paesaggio fisico.

La ricerca ha come obiettivo quello di contribuire al fondamento teorico e all'analisi degli elementi dell'architettura del paesaggio analizzando le trasformazioni del paesaggio urbano. L'ipotesi di partenza è che esiste un divario nella maniera in cui gli spazi urbani nel sud del mondo sono letti, mal interpretati o interpretati nella loro complessità. Le domande che hanno guidato la ricerca sono state : l'evoluzione del paesaggio urbano ibrido quale tipologia del paesaggio nelle mega-cities del sud del mondo e la seconda riguarda gli strumenti architettonici utilizzati in questo contesto per migliorare la qualità della vita dei cittadini nel sud del mondo.

La tesi è suddivisa in cinque capitoli. Nella prima parte la problematica viene introdotta insieme ad una revisione della letteratura esistente sulle tipologie di paesaggio e il paesaggio ibrido urbano quale tipologia ; il lavoro empirico ha adottato una metodologia mista dove l'aspetto quantitativo è stato utilizzato per mappare gli aspetti demografici del paesaggio. Mentre metodi qualitativi quali l'osservazione e le interviste sono state impiegate durante il lavoro di campo. La seconda parte della tesi presenta due casi di studio: Johannesburg e Rio de Janeiro, scelte in base ad un insieme di criteri che le configurano quali mega-cities.

Sulla base del lavoro di campo nelle due città del sud globale sono state riscontrate similitudini nella forma di ibridazione del paesaggio urbano. Infatti, il paesaggio ibrido urbano è la tipologia che descrive meglio l'insieme di fenomeni che caratterizzano queste città. Nonostante le similitudini nella tipologia di paesaggio urbano e negli strumenti pratici di progettazione del paesaggio, i processi storici dietro la stratificazione degli elementi del paesaggio hanno significativamente influenzato le strategie e le politiche urbanistiche nei diversi contesti.

The urban landscape of cities in the global south have in the past century evolved from the cities that were designed by the colonial masters based on European planning principles into cities with a unique typology. The new urban landscape is complex and characterised by a similar set of phenomena; inequality, cultural diversity, spatial injustice and political dynamics that all make their imprint on the physical landscape.

The research therefore aimed at giving a basis for a theoretical background and analysis of the existing landscape architecture tools in the context of the global south by analysing the transformations in the urban landscape.

The research set off with the hypothesis that there is a gap in the way urban landscapes of the global south are read, misinterpreted or understood within their complexity. There were two main questions; the first being the evolution of the urban hybrid landscape as a landscape typology in the new cities in expansion and the second was on the landscape architecture tools used in this context to improve the quality of life of the urban population.

The thesis is broken down into five chapters the first of which contains the introduction and literature review discussing the literature on landscape typology and the urban hybrid landscape as a typology. The second half of the thesis is focused on two case studies; Rio de Janeiro and Johannesburg which were selected based on a fixed set of criteria. The empirical research framework took on a mixed methods approach with the quantitative aspect used in the mapping of demographic aspects of the landscape while the qualitative approaches like observation and interviews were used in the field work.

The research found that basing on the two case studies from the global south, there are similarities in terms of the hybridity in the urban landscape. In this the urban hybrid typology is one that adequately describes the complex set of phenomenon that manifest in the urban landscape. However even with the similar manifestations on the urban landscape and pragmatic landscape design instruments, the historical processes behind the stratification of the different landscape elements inform the landscape policy and strategies adopted in the varying contexts.

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1. Introduction

With the new cities in expansion of the global south, the phenomenon of urban growth is one that takes on a unique urban character that is different from that of western cities. Within these complex urban landscapes, there is an organic set of rules that lean on the capitalistic, political, economic and social demands. The evolution of the Urban hybrid landscapes in the global south is an ongoing process that is the quintessence of the cities of the global south as a result of the interaction between natural and anthropological factors. The intricate landscapes that compose these cities make the tools of city legibility according to western perspectives inadequate given the complexities that are well rooted in the social, economic and cultural histories of these urban areas.

The place of landscape architecture and planning in the face of rapid urbanisation in the global south becomes a valid question. Whether an appropriate landscape design and planning approach to a sustainable practical urbanisation process is a feasible idea in an area where the numbers of these professionals pale in comparison to the western world, is a question that

requires attention.

Basing on this background the research aims at investigating the hybrid forms of the urban landscape that evolve as a result of the anthropic influences of increasing populations through immigration and natural growth; the hybrid landscape spaces as a result of the interaction of different cultures on the landscape. The evolution of adoptable urban landscapes into flexible containers and instigators of cultural exchange where human expression takes place, creating places that are defined by their experiences and ability to evoke emotions and a collective sense of belonging. Also connected to this is the co-relation between the quality of life of the urbanites and the new hybrid landscape.

The thesis is written out in five main chapters: the first two consisting of the introduction, problem statement, objectives, research questions and the research methodology. The methodology of the empirical research is based on a mixed methods approach that combines quantitative and qualitative approaches in a triangulation of the observation, interviews and review of documents.

The literature review is on the discourse of typology in landscape architecture, the intangible and tangible and the hybrid landscapes basing it on the functional, experiential and morphological aspects of it. The urban hybrid landscape is

defined as a typology of landscapes that are in a continuous creative process of a new unique identity as a result of the coming together of distinctly different landscape typologies in a complex unit.

The third chapter documents urban hybrid landscapes of the case studies of the two cities of Rio de Janeiro and Johannesburg and identifies two particular cases; the gold mining belt in Johannesburg and its role at a territorial landscape scale and in Rio de Janeiro, the Manghuinos complex of favelas as an urban renewal project undertaken by the city to address the existing issues using a landscape architecture tool. In the following chapter the emphasis is on a comparative analysis of the two cases, taking consideration of the phenomenal similarities and differences in the pragmatic approaches that were undertaken in both cities from a landscape perspective. The different policy tools, infrastructural approaches, urban design and social activity strategies are compared in respect to their contextual relevance as well as their impact.

In conclusion, the original contribution to the field of landscape architecture of this research process is the emphasis on the key role of landscape architecture in the improvement of the quality of life in the hybrid urban landscapes of the cities of the global south. This in a context where the general presumption is that landscape architecture, urban design

and principles of access to public space is perceived as a luxury and western ideal that is imposed onto the locals. In areas where the primary concerns are based around the 'tangible' or real physical issues concerning the health sector, education and provision of services like water and electricity, affordable housing provision taking priority at both the local and the government level. The thesis emphasises the need for a more comprehensive and holistic planning process that includes the key aspects of landscape design and public space provision from a contextual cultural perspective. It manages to achieve this using the narratives of the two similar and yet contrasting contexts of Johannesburg the capital of the Gauteng physical region of South Africa and that of the Brazilian city of Rio de Janeiro.

1.1 Problem Statement

The dynamics of urbanisation at a global scale are on the increase with the United Nations and the World Bank stating that the bulk of this urbanisation is currently and will continue to take place in the global south in particular the continents of Asia, Africa and Latin America. The issues of slums and informal settlements is now more or less an accepted reality of today's hybrid urban context forming a part of the city as a source of accommodation for a big portion of the urban settlers. This along with issues of provision and accessibility to adequate spatial conditions for all members of society is a direct call to the need for the planning for the process and address-

ing the issues using not only traditional urban planning tools but plans that include landscape planning, management and urban design tools. To do this, there is a need for an adequate landscape typology assessment of the complex landscapes of these cities and an understanding of adequate landscape and urban design tools.

1.2 Research Objective

Investigation of the existence of the character of an urban hybrid landscape typology as a result of urbanisation in the developing world. (Comparing the urban landscapes of two cities in expansion one in Africa and the other in Latin America). Analysing the role of the hybrid landscape typology in the quality of life in urban areas where rapid urbanisation is taking place.

1.3 Research Questions

- What is the character of the new typology of the urban hybrid landscape of the diverse cultures of the new mega cities of the global south? What is the form and identity of these new hybrid landscapes?
- How do these hybrid landscapes affect the quality of life in the urban areas? How can this information be integrated into landscape architecture and planning in the developing world cities?

1.4 Scope of the Research

The research scope is within the global south in particular the continents of Africa and Latin America. Within this, two specific case studies were selected from the existing main cities of these two continents, these were Rio de Janeiro in Brazil and Johannesburg in South Africa. It focused on the urban landscapes of the two cities, with particular case studies of marginal hybrid landscapes.

1.5 Definition of Keywords

Rapid urbanisation, hybrid landscapes, intangible landscapes, quality of life, informal settlement policy.

- **Rapid Urbanisation**

The shift of the population of an area from a rural based population to an urban based population at a fast rate.

- **Hybrid Landscapes**

Hybrid Landscapes are the complex result of the evolution of different elements indigenous and colonial, diverse cultural, natural and artificial, rural and urban within the context of the urban landscape.

- **Quality of Life**

The quality of life of citizens is a criteria of their well-being as determined by the circumstances in which they find themselves in regards to their environment, economic status, public health and welfare, community and their built environ-

ment.

1.6 Methodology of the Research

The methodology of the research is based on Creswell's (2003) Mixed Methods Approach that will comprise a combination of both quantitative and qualitative methods in the data collection process. In recognition of the fact that the research has both subjective and objective elements to use either a quantitative or qualitative approach would limit the results due to possible biases of either approach, despite of its own limitations as well, the mixed methods would be a means of mitigating the gaps. In this process, the narrative research methods of qualitative research (Connelly 1990) methods for data collection used in the research included field notes and unstructured interviews with different stakeholders in the research. The field notes and photographs were also made to document the different observations that were made in the specific case study areas in Rio de Janeiro and Johannesburg.

- Selection of Case Studies

At the beginning of the research, with review of literature and background research, the choice of the case studies to be carried out was made basing on a number of factors including location and other criteria that define cities in expansion. To narrow it down to the two cities, they were selected basing on their location, position in urban research,

global attention in terms of international events and the fact that they are considered to be points of reference in terms of city policy and implementation of strategy. In this regards, the case studies were effectively narrowed down to Johannesburg in Africa and Rio de Janeiro in South America.

- Analysis of the two cities

In the case-study analysis different approaches of data analysis were used to comparatively study the two cases in terms of morphological aspects, urban form, urban landscape character and the anthropic progression of the city.

- Time-line studies

The progression of the two cities from their foundation were compared to understand the different influences key historical events had on the physical contemporary landscape. In this time-line study the main focus was on the urban growth in terms of population, informal settlements and urban form progression.

- Maps analysis

Different maps and satellite images of the different periods of the urban expansion process were also studied to capture the urban growth pattern on the landscape. The different landscape elements were mapped out into different layers and these included the natural green elements, the informal settlements in the city, the built up form and an interlacing of

all these elements.

- Criteria for the choice of specific case study areas:

In the next and final step that aimed at looking at a local scale, there was a selection of specific areas, the Criteria for selection of the specific field case study areas in Rio de Janeiro and Johannesburg were based on the following factors:

- A result of the mapping processes delineating the income, informality and the geomorphological attributes of the settlements area.
 - Urban Landscapes (within the geographical urban city limits).
 - In the context of a diversity of populations, indigenous, formal, informal and immigrant.
 - Urban spatial margin landscapes between the formal and informal settlements.
 - Urban landscapes that contain and attract diversity in cultures.
 - Strong aspect of the natural elements in the city related to geological, topographical or natural river ecosystems.
 - Existence of realised and proposed physical and intangible interventions on the landscape aimed at the living conditions of the participants.

As a result of this process, the area of Manghuinos favela complex was chosen in Rio de Janeiro as a study area with specific reference to the government investments in the area. In Johannesburg, the gold mining belt which is part of the city's proposed project of the 'corridors of freedom' project for the city that extends from east to west and beyond the city boundaries was taken as an informative area.

In data collection, the different maps of the two cities were read in recollecting different spatial elements; study of urban and landscape evolution, Google Earth Time-lapse to showing the expansion of the cities in the last two decades, comparison of maps from past times to understand settlement patterns over time, analysis of the urban evolution, landscape evolution, margin areas and the areas with signs of hybridisation taking place in the urban landscape. As part of the quantitative data collection population census, planning documents and development frameworks for both countries were also collected so as to inform on the demographic analysis, settlement patterns and economic growth.

2. Literature review

2.1 Landscape Typologies

Typology is a term used to give a form of classification for a specific style for easier understanding in research and analytical approaches. Typology in landscape research is used to classify different landscape types so as to ease their categorisation or assess their different characters, Zube et al(1983). They defined the idea of typology as a classification tool used in the form of assessment models; of these they defined landscape to be classified into five categories or rather "land assessment models" based on their utility, sensitivity and validity; ecological, formal aesthetic, phenomenological, psychophysical and psychological.

The ecological model of landscape typology bases on the environmental and natural landscape qualities, the formal aesthetic bases on it's structural form and materiality including the relationships like contrast and harmony, psychophysical model is a more scientific model that bases on the functional reactions between the physical stimuli of the landscape and the effective psychological reaction, psychological model on the other hand assesses the perception of the landscape emphasising on the cognitive reactions to the landscape and finally the phenomenological model is one that is related to the genius loci and the spirit of place aspect of the

landscape assessing the subjective aspects of the individual in the environment. The five groups of classification are further grouped into two categories one aspiring to the physical elements of the landscape while the second category directly influenced by the emotional aspects of the landscape on the individual experience. The first category employs analytical tools of the physical aspects of the landscape and their abstraction. On the other hand the second category uses quantitative tools that represent the human responses to the landscape, these tools quantify the different sentimental values held by different individuals for the landscape. However in the late 80s theorists like Fenton and Resser grouped the approaches of classification into 3 groups; objective measurement of physical-setting variables, normative judgments and the phenomenological classification of the landscape characters.

Later on in the 1990s, (Beer, 1990) another perspective was the use of classification or types based on the morphological character of the landscape defining the character in terms of the patterns on the landscape. In this aspect pattern or the basis of the typology classification is the structure of the complexity (in terms of scale and perception) of the elements that form the general appearance of the landscape.

However, a sort of uniqueness in the typology and characterisation of urban landscape seems to be the trend in the contemporary period. Given the blurring of urban landscape characters by the globalisation of cities, they now tend to be at a crisis of self identity. For instance the German *Eigenlogik* (intrinsic logic of cities) research which studies the characterisation of the uniqueness of the spirit of place linked to the physical built up and unbuilt up elements of the urban landscape, the socio-economic and cultural patterns in cities. (LOEWE Research Area – Intrinsic logic of cities,

TU Darmstadt 2014). For this reason a significant amount of urban landscape research is now geared to identifying the specific tangible and intangible landscape attributes that reinforce this identity at a city scale and not national scale, an example of this city branding idea would be Amsterdam and it's logo Am-star-dam.

In Landscape research, typology is seen as a way of giving gradation or a type of standardisation for instance using the basis of the level of rural to urban landscape character for example from rural landscape typology to suburban and urban. This typology is often based on the landscape appearance and the manner in which different elements are spatially distributed. However classification more than often is biased by the goal-oriented or the results that the researchers aim to achieve and not standardised. As seen in most of the research around typology, definition and categorisation of the landscape in the defined categorical groups are based on the descriptions and perception of the tangible and intangible aspects of the landscape.

2.2 Tangible Aspects of Landscape

The tangible aspect is the physical and spatial composition of the landscape in terms of topography, vegetation patterns, settlement patterns and other aspects that physically inform the landscape and how it is perceived. In the landscape architecture profession the tangible elements are well researched and manipulated as tools in order to achieve the desired aims of the profession which is create physical spaces that are occupied and experienced by people. It is the variation, manipulation and composition of these physical elements and material means to which the landscape architecture, planning and spatial products are produced at different scales from the territorial to the local neighbourhood or residential scale.

2.3 Intangible Aspects of the Landscape

On the other hand there are the intangible aspects of the landscape which provide a more complex way of looking at the landscape. In this the landscape is seen beyond the physical signs but directly relating to the emotional and the ephemeral aspects in its use, occupation and the manner in which it is perceived. The intangible for the landscape architect is an element that gives meaning to the anthropological and ethnological processes connected to the landscape. The UNESCO definition of the intangible aspects gives direct reference to the human aspects.

"People's learned processes along with the knowledge, skills, and creativity that inform and are developed by them, the products that they create and the resources, spaces, and other aspects of social and natural context necessary to their sustainability."
UNESCO definition of intangible aspects.¹

The recognition of the role of the intangible elements of the landscape are part of the result of the paradigm shift in the field of landscape design, conservation and management influenced by the anthropological disciplines to elevate the relevance and influence of the intangible and human aspect that define the ambiguous definition of landscape. This shift sought to give a collective understanding and recognition to the concept of landscape through the integration of the cultural and natural realms and preservation of the sense of identities and diversities of different cultures in the place in which they find themselves. Giving strong relation to the relevance of the cultural aspect of landscape, and the mentality of cultural landscape.

It is within this context that Carl Otwin in the 1920s coined the term cultural landscapes to recognise the complex relation-

1 UNESCO 2001

ship between human influence and the natural landscape in which economic dynamics. The concept is one that explains the manner in which space and culture are products of urban life in the different places in which human behavior and expression is contained. Its richness and variety are physical evidence of cultural religion and social community (ICOMOS 2009). O'Donnell (2008) elaborates the intangible values as part of the daily activities and also special occasions within the landscape; the landscape-rooted intangible values as expressed in the forms of:

- Festivals

Festivals and activities as part of the landscape, an expression of celebration as a community. They are particular events which can be traditional, cultural, religious or political that are recognised communally. The strength of festivals is in the fact that they allow society to be expressive in manners that are beyond what is expected in the ordinary and in this they encourage interaction and as a result influence positively on the sense of togetherness in the community. They take place in public spaces like squares and streets making it alive for a specific time but have lasting impacts on the space. This is due to the fact that it gives the space a sense of place as a result of its ties to the communally recognised festivals that are hosted.

This sense of spatial identity is as a result of being known as the 'festival space' by making invisible boundaries that define the festival space, form the private space within which the activities define the festival character. (Willems-Braun, 1994). Although the space is physically transformed temporarily to suspend the ordinarily spatial regulations to accommodate the festival, it has a permanent impact on the intangible landscape of performance and cultural expressions within these boundaries.

- Traditional Music, Dance and Performance

Expressions of traditional Music, Dance and Performance are activities that are a way of self expression and cultural heritage preservation. Cultural performances through music and dance are a mode of transmission of the different cultural identities in the landscape not only to the members of the cultural groups but to outside members as well. The space in which this takes place is transformed temporarily to accommodate the performance if not physically then in the manner in which the steps and the formation is organised in the space. The manner in which different movements and rhythmic patterns are performed all transmit different messages of artistry, celebration and rituals, manifesting the cultural identity and pride taken in the participation. They bring a sense of a socio-spatial phenomena of dynamism and life to the landscape forming part of the intangible aspects of the landscape with which they are associated and directly affect the way in which the landscape is perceived.

- Pilgrimage

Pilgrimages are directly related to the third category of UNESCO cultural landscapes as they render landscapes sacred owing to their spiritual connection for the pilgrims. The value placed on the site is beyond aesthetic value and reinforced in the holy sacred character that embodies the landscape. In this case the entire journey and not just the destination site is considered sacred. This procession area is all a part of the pilgrimage cultural landscape that is visited by people from diverse backgrounds coming to pay homage to a deity they have in common associated to the landscape.

- Worship, Spirituality, Ritual

'It is the landscape as a whole – that largely man-made tapestry, in which all other artifacts are embed-

ded and that which gives them their sense of place'.²

The landscape is the canvas on which the spiritual act of worship of nature or whichever deity, takes place, it is an experience that is active and deeply personal that is projected onto the landscape. This relates to a continuous link of landscape features like the earth, water or air at varying scales depending on the rites and practices of the religion.

The rituals are often social activities that take place in the collective form with the lead role being taken by the spiritual leader and in effect form a sort of collective perception of the cultural landscape evoking intangible values. Their strength is in the way they evoke a sense of intuitive comprehension of the space from complexity (Cohen 1989).

- Commemoration of Past Events

One aspect of the understanding of the way in which the idea of memory is manifested on the landscape. The commemoration of past events in the landscape is in the way in which traces of the layers of time and human activity is legible over time in a collage or hybrid of stories. They combine the aspect of time and human cultural activity to form the cultural landscape. Another aspect of it is the use of activities and festivities that are carried out on these landscapes to commemorate and celebrate different cultural events that are significant to the participants of these activities.

- Traditional Practices

Traditional practices vary from group to group with different ethnicities expressing their identity in different ways through symbols, activities and rituals or general day to day activities in a

² Lowenthal, D., (1981), Introduction in Lowenthal, D., & Binney, M., Our Past Before Us. Why Do We Save It?, Temple Smith, London,

manner that is particular to their ethnic or cultural identity. The manner in which things are done or activities carried out that make reference to the way in which they are done by members of a particular group is a reflection on the ethnic culture therefore affirming and unifying their identity as one.

- Iconic Shared Community Place of Memory and Present use.

The intangible and physical attributes of the landscape collectively form the complex experiences and place elements to define the genius loci of the area. This qualitative anthropological dimension gives more sentimental value and understanding to the holistic perception of the landscape.

On this foundation it is clear to see the strong relationship between landscape and culture echoing the quote;

“The Cultural landscape is fashioned out of a natural landscape by a cultural group, Culture is the agent, the natural area is the medium, the cultural landscape is the result”. Carl Sauer. ³

(Taylor, 2008) The landscape is read by one’s eyes and intellect as a documentation of the history of humanity combined with the complex relationship to the aspect of time layering values over each other to inform the spirit of the place. He goes on to emphasise the relevance of these values in the process of place-making and a relative tool in heritage and landscape management.

Anthropic activities are the constant livelihood of humanity’s existence in the landscape over time constantly transforming

3 ORTWIN, C., S. 1969. The Morphology of Landscape, in John Leighly, ed., Land and Life: A Selection From the Writings of Carl Ortwin Sauer (Berkeley and Los Angeles: University of California Press, [1925])

the landscapes in which they occur. The records of these activities both tangible and intangible are written in the landscape and form as a collective the cultural landscape. The fact that they are a product of the constantly changing anthropic activities, also reflects in the trans-formative character of the landscape to reflect these constantly evolving perspectives and dynamics like the economic changes, social and political changes on the landscape.

2.4 The Hybrid Urban Landscape

In this research the term hybrid urban landscape is used to describe the landscape typology of urban landscapes in the global south and in particular the cities of Rio de Janeiro and Johannesburg. Their complexity in composition gives them their hybrid character that is described later on in the third and fourth chapter.

- **Hybrid**

The Advanced Learners English Dictionary definition for hybrid is as a noun which is the result of the combination of two different elements, as an adjective it is defined as having a mixed character, or composition of different elements. The term is from the Latin version *Hibrida* that defines the body that is a result of the crossing of genetically different parental forms. In Italian the word is used to define objects that are composed of different natural species if they do not result in a superior unit.

Hybrid in the English sense is used to describe the idea of impurity in the identity or the combination of different elements to form a unique single element. It highlights the idea of a mutual collaboration of the different elements to form a third collective element. In contrast to the collage where the different elements are distinctly recognizable in the new formation, the case of the hybrid is quite the contrary because these individual elements collectively

evolve to form an entirely new object. It is therefore not an ad-hoc eclectic result of the coming together of different individualistic objects but the creation of a new entity with a whole new identity (von Mende et al).

In essence a hybrid is the resultant object of the coming together of two or more heterogeneous elements that is different from it's original elements but still holds their characteristics so as not to be considered a totally new object but a hybrid of the formative elements.

- Landscape

The term in itself is an English word with routes based in the Anglo-German languages, and its first noted use was in 500AD. It was used to define a sort of open clearing in the woods where people and animals could exist comfortably. It was an artifact, a creation of man within the greater context of nature within which he could set up conditions comfortable enough for his existence. This term however evolved to gain meaning in the idea of wilderness and nature that is untamed. In this case there was landscape under which nature fell and there was the human aspect of it which was a distinct entity all together.

The European Landscape Convention (2000) defines landscape as an area as perceived by people, whose character is the result of the action and interaction of natural and/ or human factors. ⁴

The human factor is very key at this point in the definition of Landscape as was the paradigm shift making it a thing of not only distant observation but one of active participation, experience and perception.

⁴ European Landscape Convention. Florence, 2000.

The Latin American Landscape Initiative (LALI, 2012) also has a strong focus on the intangible, cultural and human aspects of the landscape recognizing it as an exceptional and fragile element that is in constant transformation. In line with this, landscape experts in Paris 2010 efforts towards an international landscape convention with the proposed definition of landscape being;

Landscape is defined as a space / time outcome of natural and human factors, tangible and intangible, that being perceived and modeled by people, reflect the diversity of culture.⁵

2.4.1 Hybrid Landscape Typology

Hybrid landscapes are neither a collage of landscapes whose boundaries are clear cut and re-traceable next to each other nor are they a mosaic of patterns of different landscape formations that can be read as a whole complete unit of landscape.

Hybrid landscapes are a typology of landscapes that are a result of a continuous process of the creation of a new entity with a whole new unique identity that may or may not have characters similar to the original entities, as a result of the coming together of distinctly different landscape typologies in a complex holistic unit.

In the urban context, hybrid landscapes are the result of two place-making processes; the traditional landscape architectonic design of urban places like public squares, parks and streets and the second process is the manner of ordinary day to day use and multiplicity of functions that are involved in the act of place making by the users of these spaces which concludes to the idea of hybrid spaces being community landscapes. (Quayle et al, 1997). The temporal aspect of the hybrid landscape is elaborated by Maura Quayle in an example of the beach as a transient hybrid landscape that

⁵ Latin America Landscape Initiative (LALI)

evolves by the different territorial claim methods adopted by the users and the way in which these little territories are modified to accommodate their needs and reflect their cultural backgrounds on a daily basis. However the example of the beach is one that is of a temporal hybrid landscape which changes back to its impersonal state at night and in the winter. While the true sense of hybridity is in the fact that these different territorial marking activities would leave a trace of their existence in the landscape contributing to its wealth in character and identity. This wealth of different characters of individual elements forming a new whole element makes the hybrid landscape a more superior composition as a result of the collective aspect involved in its creation.

At a neighbourhood scale, the rules that govern the making of a hybrid landscape are simple. The first rule is that control over this portion of the public realm is gradually transferred from municipal agencies to the community itself.

*The price of gaining control is accepting "responsibility: those who control a place should have the motives, information, and power to do it well, a commitment to the place and to the needs of other persons and creatures in it, a willingness to accept failure and to correct it".*⁶

Consequently the collective power and responsibility to the space that is considered to be hybrid reinforces the idea of community identity in reference to this space.

*A strong dialectical relationship exists between the urban landscape and a sense of community. The urban landscape can function as a growing medium for the community; it can be a culture for community.*⁷

6 LYNCH, K. 1960. The Image of the City. MIT Press, Cambridge Massachusettes. (p. 211 of Lynch, 1984).

7 QUAYLE, M., DREISSEN, V., D., L. & TILO, C. 1997. Growing community: A case for hybrid landscapes. Landscape and Urban Planning, 97:39, pp. 99-107.

In this sense, Hybrid landscapes embody collective cultural memories and activities that manifest a sense of belonging as it is a result of the creative process of the community through their daily acts of use. These urban landscapes that are a result of this dual process are communally accepted and more likely to succeed as public spaces because they have a wealth of communal cultural values, structure, wealth and diversity that result from the creative aspects of the collective individuals.

"We need an environment which is not simply well organized, but poetic and symbolic as well. It should speak of the individuals and their complex society, of their aspirations and their historical tradition, of the natural setting, and of the complicated functions and movements of the city world. "
Lynch.⁸

To Lynch the hybrid landscape was crucial in understanding the social, physical and cultural elements of the people who make it. In this perspective, it could be said that urban hybrid landscapes are the result of a dual process the first being the regulations and goals a community has for itself and then the second process is the active process that they take to make this.

The hybrid landscape is therefore crucial in understanding the social, physical and cultural elements of the people who make it. The landscape is material for analytical activities, social and cultural actions, built interventions and different modifications in the contemporary city. The territory is in fact composed of new stories, with different protagonists and diversities from the recent times as well as the old and ancient stories overlapping, industry, complex residential and urban renewal projects all form the logic and the construction of the city as hybrid (Zardini, 1999). In this the hybrid

8 LYNCH, K. 1960. The Image of the City. MIT Press, Cambridge Massachussettes. (p. 211 of Lynch, 1984).

landscape is ever evolving and never constant in its constitution.

To Zardini (1999), hybrid landscapes are the contamination of form and languages in space in the search for purity. Therefore the identity we find is not one of purity but one in the capacity to identify the differences. He goes on to emphasise the importance of the spaces between the objects bringing forth the idea of margins, edges, the boundaries and how these spaces that are “no-man’s land” are in effect the communal territory, the binding skeleton of the different elements that form the city. In this sense margins in the urban landscape are elements of reference in identifying the urban morphology and the traces of its different formative components. The characters that determine hybridity in the urban landscape are the idea of contrast at different levels; the coexistence of nature and anthropic elements at different cultural dimensions. The urban hybrid landscape aspect is investigated in the typologies and morphologies of urban built forms, the mix of typologies of urban public spaces and the urban margins.

Returning to the Italian school of thought and the strong theoretical base for urban studies and analysis of the urban fabric, Zardini reflects on the theories of Sergio Crotti on the classification of urban forms as a framework for a sort of typology based on three categories according to the characteristics exhibited;

- Urban Morphology
- Typology
- Technology.

Zardini goes on to break down the types of hybridization in the urban landscape to be in 4 different categories;

- Between the old and the New, the cultural and Nature, Architecture and Nature
- The coexistence and intermingling of different urban functions within a single use area.
- Pieces taken from different building/urban types reassembled in a new hybrid form
- Connections to a new and innovative presence and the intermingling of public space (built and unbuilt).

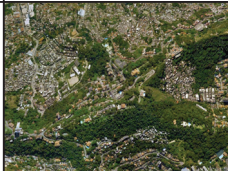







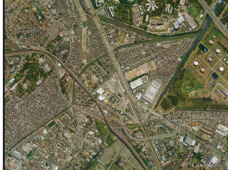

These categories are applied to the different urban design and architectonic scales with the first three being as analysed and more applicable at an urban scale while the last category basing on the spatial scale is at a much smaller scale. In this way it would make sense to base the categorization as three categories of;

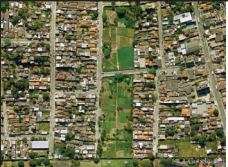



- Morphological Categorisation
- Functional Approach to Categorisation
- Spatial Categorisation

1. **Morphological Categorisation**

Under morphological categorization there is the idea of the hybridization of the landscape as read according to the diversity in terms of urban built form and the settlement patterns on the landscape. This can be in terms of formal/ informal built form within the landscape and also the strong presence of nature intertwined with the urban fabric as is the case of Rio de Janeiro where the ocean, the mountains and the built form all combine as strong distinct elements of the holistic city.

With increasing urbanisation, and in particular towards

FORMS	CATEGORIES	CHARACTERISTICS		
Morphological	Nature and Built-scape	<ul style="list-style-type: none"> - City in nature - Nature in the City - Co-existence of Nature and the City 		
	Differences in Fabric	<ul style="list-style-type: none"> - Highrise and Lowrise - Block Dimensions in the grid - The stark contrast in the urban texture 		
	Variation in Densities	<ul style="list-style-type: none"> - High density and low densities 		
	Formal/ Informal	<ul style="list-style-type: none"> - Formal in the informal settlements - Informal in the formal settlements 		
	Infrastructure	<ul style="list-style-type: none"> - Extensive interlacing infrastructure cutting across the urban landscape. At various heights. 		

FORMS	CATEGORIES	CHARACTERISTICS		
Functional	Urban and Rural functions	<ul style="list-style-type: none"> - Combination of urban and rural functions in the urban landscape. - Rural populations still practicing their rurallifestyle in the urban contexts 		
	Urban Agriculture	<ul style="list-style-type: none"> - Patches of the landscape used for urban agriculture - Open voids in the landscape informal agricultural innitatives - Wlthin private gardens 		
	Minning and Extraction	<ul style="list-style-type: none"> - Patches of the urban landscape are - Active or defunct minning areas within the landscape. 		




FORMS	CATEGORIES	CHARACTERISTICS	
Spatial	Cultural	<ul style="list-style-type: none"> - Diversity in the cultural use of the spaces by different cultural groups - Use of ethnic theatre, dance and musical as well as spiritual expression 	
	Daily Activities	<ul style="list-style-type: none"> - Variety in the way the Daily use of the public spaces and streets depending on different needs 	
	Ephemeral Activities	<ul style="list-style-type: none"> - Temporary art exhibitions and street activities within the streets and public spaces. 	

Table 1. The categorization of hybrid Urban landscapes

the end of the last century more hybrid forms are appearing in the landscape in different forms like formality and informality of settlements in the same areas, built up form and natural areas co-existing in the same area. The city is not as clearly defined as it used to be in the ancient times with the core of the city being built up and the edge being clearly defined. Cedric Price describes this concept of complexity and hybridity in a simple sketch description of the ancient city being in the form of a hard boiled egg and then progressing to a fried egg in the 18th century and the modern city of today is a scrambled egg with a hybrid character.

Calvino's metaphor of a herdsman observing the city is a description of the hybrid nature of the city and nature forming a whole which is the city and no longer views the elements of the city as distinct elements;

"I am a wandering herdsman. Sometimes my goats and I have to pass through cities; but we are unable to distinguish them. Ask me the names of the grazing lands: I know them all... Cities have no name for me: they are places without leaves, separating one pasture from another..." "I am the opposite of you," I said. "I recognize only cities and cannot distinguish what is outside them. In uninhabited places each stone and each clump of grass mingles....."

Italo Calvino ⁹

Bohme et al (2006) looked at the hybridity of the urban built form and the nature in the city, with the view that with increasing city sizes and need for green spaces and at the same time lower municipal budgets to cater for classical public parks and gardens, there is a need for a cheaper solution. This new landscape design in the form of profitable and sustainable urban agriculture and "wild" natural spaces are a new affordable alternative to the origi-

9 CALVINI, I. 1972. Invisible Cities . Giulio Einaudi Editore.

nal idea of urban green spaces and parks.

2. Functional Approach to Categorisation

Urban agriculture in the rapidly urbanising world is more a case of cultural expression than an effort to sustainable food production. Especially in the case of African cities where the subsistence production culture is not only a part of the rural way of life but one where the urbanites also try to continue this lifestyle in the urban setting. It therefore is a process that generates the rural cultural identity and landscape productivity in a new urban-nature hybrid relationship. These new typologies of "un-urban" forms of green within the urban landscape are a call for a look in the vocabulary of research and design with a look into how planning and landscape architecture can engage new tools to incorporate this. Dettmar (2003) discussed the possibility of hybridity in urban landscapes to incorporate the then emergent idea of urban wilderness to visualise green space as attractive with ecological value as part of the urbanised cultural landscape.

When it comes to infrastructure in the urban landscape, Coccia 2012 looks at the proposal of Le Corbusier for the city of Rio de Janeiro where the highway is no longer just a motorway but is inhabited by the people and is integrated into the urban landscape, connecting various areas and neighbourhoods that were disconnected.

The builders of the machine era have not yet arrived at the understanding that the streets are no longer a crust imposed on the land, but is a longitudinal construction, a building, the street is a container and not an epidermis skin layer.

*Le Corbusier*¹⁰

¹⁰ CERRI, P. & NICOLIN, P. 1987. Le Corbusier, Verso una architettura. Longanesi, Milano.

The idea of infrastructure incorporated in the urban landscape both as a functional element for-example when elevated to create an accessible landscape on the ground level or when placed underground to create an overhead park is an expression of the hybrid character of infrastructure in the urban landscape. Another example would be the New York Highline when the infrastructural elements that are now defunct are incorporated as usable or recycled to accommodate new uses. Or the proposal by Gensler Architects to transform the defunct London underground tunnels into pedestrian friendly and bike lanes for the city integrating it into the urban landscape of the city.



Fig.1 The city as an egg.

Source: <http://eggchips.blogspot.com/2010/06/cedric-price-and-fried-egg.html>

3. Spatial Categorisation

The cultural hybrid landscape of the globalised world today is one that is in constant interaction between the Western and the Eastern world or the developed and the developing world. It is a cultural landscape of influences from the different cultures interacting and layering their footprints on nature; much more complex than the hybrid cultures described by the anthropic post-colonization theories that described the evolution of new post-colonial cultures between the colonialists and the indigenous peoples.

The indigenous peoples of different African, American and Asian lands were mainly well-rooted to the land and constructed their socio-economic lives in layers of history on the land and in their intangible values. These were in the forms of the manner in which they constructed and the use of materials, building orientation and different vernacular forms of architecture and collective space design. When the different colonialists came to the scene, they transferred their layers of socio-economic values and layered them onto the same landscape creating a whole new form that had characteristics of both the indigenous and the colonial attributes. This layering process varied in character from place to place and the length of the period of occupation affecting the process and other factors like political and social factors.

The commodity of those layered meanings in landscapes becomes the basis for heritage through "not the facts in which the world abounds, but the myths of an immemorial imagination" . Campbell ¹¹

Berrizbeitia (2003) describes cultural hybrid landscapes as the crossing of colonial, indigenous and African cultures on the

¹¹ EDSON, G. 2004. Heritage: Pride or Passion, Product or Service? International Journal of Heritage Studies, Vol.10, No.4, September 2004.

landscape in her review of Burle Marx's works in Brazil; as landscapes that are a complex result of hybridisation of the indigenous, colonial, African and European influences.

The contemporary hybrid cultures manifests in the way the different identities occupy their territories through social, cultural, economic and diversities in settlement patterns. These diversities form part of the unique intrinsic logic ie "eigenlogik" (TU Darmstadt Urban Research Lab) ¹² of the cities in which they manifest. Which is to say they form distinct constellations of the spaces and place making activities of the inhabitants in the city. These tangible and intangible aspects of the diversities in the landscape are a representation of the way in which relationships between diverse cultures are woven into the identity and the character of the landscape.

Fig.2 Urban agriculture in
Johannesburg source:
www.urbansprout.co.za

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[index.en.jsp](http://www.stadtforschung.tu-darmstadt.de/eigenlogik_der_staedte/index.en.jsp)

http://www.stadtforschung.tu-darmstadt.de/eigenlogik_der_staedte/



With urbanisation, immigration and continuous cultural exchange through globalisation, the post colonial world of today is more of a hybrid of cultural fusion in contrast to the former dominating social, racial and cultural unique identities. This continuous and dynamic cultural hybridisation is expressed with tangible and intangible traces on the landscape. These traces are an expression of the evolutionary process of the different dynamics and assimilation processes that are established in the landscape.

In sociology hybridisation is the continuous process of merging into a whole entity different aspects. With globalisation and increasing urbanisation and immigration, it is a common phenomenon that different territories have a rich mix of ethnicities from diverse backgrounds and social classes with diverse views and perspectives. Cities thrive on this and effectively the society is one that is rich in diversity of cultures and as such often receiving new entrants to come and exist in the same city with the old. Often these new migrants are drawn to areas where there are people with similar backgrounds be it ethnic, racial or just the economic class forming cliques or neighbourhoods with similar habits for example China-town in Milano located in the city or at a more micro scale immigrant neighbourhoods with Arab populations still within the same city. This process of colonising neighbourhoods is often expressed in the public spaces and open spaces within the "conquered" neighbourhood creating a sense of territory that can be a form of rejection to other people from different backgrounds.

However in the city it is hard to deny the fact that where as there is the extreme case of territorial discrimination, there is also social cohesion offered by the same city, and the effect of this hybridization does manifest itself in the landscape with the homogenisation in both the tangible and intangible sense. These are

exhibited in the way in which the different cultural groups use the same public spaces in the neutral areas for a moment in time taking ownership of that piece of territory through their self expression; vibrant local dance festivals for a particular group of society within the same space used by another group as the village market space to sell their agricultural produce or in another case by children from the neighbourhood to play soccer.

This hybrid cultural expression in the urban landscape is a strong characteristic in the context of the global south in particular Africa and Latin America. The manner in which public parks and open spaces that are designed by landscape architects with a more westernised approach are occupied and adopted to specific forms of cultural expression. For example in this context, some urban squares designed for civic pride are converted into a complex system of spatial use with parts of the space converted into make-shift market places while the rest of the space may maintain the civic character.

From the literature, there is an importance of interdisciplinary action suggesting a methodology of design that promote the ideology of interconnections of the city and landscape instead of them

Fig.3 In this photograph taken in the neighbourhood of Pedro do sal in Rio de Janeiro, the streets and small square become the public space in which the different members of the community express themselves and use them as best fit to their social and economic needs.



being considered distinct entities. This is a rhetoric that highlights the idea that recognizes the pre-existing principles of landscape formation including the heterogeneous cultural cohesion processes to support an urbanization that integrates the identity and spirit of place to avoid homogeneity.

2.4.2 Quality of life and the Landscape

From the 1960s, there has been a focus on the idea of Quality of Life in relation to public space and sociology due to the rising inequities in economic and class differences and their perception of space at different scales from local to regional. Salleh (2012) notes that neighbourhood satisfaction and the circumstances in which they find themselves living in influences their perception of their quality of life. In the 1990s the research on quality of life and its relation to the built environment at the urban scale mainly focused on the design for policies and urban planning as a connection to the influence on the welfare of the residents within the specific areas (Marans, 2012).

The American Council of Architecture Registration Boards Research (Spears, 2010) highlights the fact that in the context of quality of Life, Landscape Architecture aims at using natural environments to enhance the functioning (in the economic, cultural and psychological aspects) at the present as well as in the future. The scope of landscape architecture in the relation to quality of life is in the spheres of;

- Environmental sustainability
- Economic Sustainability
- Promotes public health and well being
- Community Building
- Encourages Landscape awareness

- Aesthetic and creative experiences
- Effective community functioning

The pragmatic nature of the landscape architecture profession facilitates it with the tools to directly impact on the daily livelihoods of the citizens through design, planning, management and policy. Quality of life aspects as regards to access to public space attributes to the psychological wellbeing of the urban populations providing opportunities for social integration and interaction in the public spaces. Although there is a seemingly direct relationship between the field and the environmental campus that is often associated with health benefits and sanitary facilities, there is still a considerable gap on the available literature on this fact.

2.4.3 Hybrid Landscape as a Design Strategy

So the role of green and landscape and in this case hybrid urban landscapes in the urbanising cities of today is one that is linked to the quality of life of the inhabitants. At the end of the 20th century, urban landscape design was an element of consumerism for urban rejuvenation projects and status symbols of the mega-cities of the time according to Sudjic (1993). However with the turn of the century and the rapid urbanisation of the Asian cities, there was a new shift towards public welfare through water management and water-front spaces to counteract the effects of high-rise apartments (Sudjic 1999).

In the global south, where there are many informal settlements that are facilities that contain new immigrants and urban people in a transition phase from the rural lifestyle to the urban lifestyle, the hybrid urban landscape is one which incorporates their relationship with nature through urban agriculture in the urban form

that integrate landscape, infrastructure and productive land. These shared spaces and modes of use often act as a platform for civic engagement and eventual cultural integration for the new immigrant populations in the city.

In the recent times, Rem Koolhaas was one of the global architects to raise awareness of the issue of the danger of having the motorway as the only open space available in the Randstad area of the Netherlands, effectively raising awareness to the need of the involvement of landscape architects in the planning for urban growth at a global level so as to ensure a decent quality of life for the urban dwellers. Landscape architectural design in recognising this fact needs to shift from a consumerism based approach to one that is sustainable and inclusive of a greater share of the urban population in the rapidly urbanising cities of the global south.

Strategies

As earlier stated, hybrid landscapes are a typology of landscapes that are a result or a continuous process of the creation of a new entity with a whole new unique identity that may or may not have characters similar to the original entities, as a result of the coming together of distinctly different landscape typologies in a complex holistic unit. They are in essence the complex result of the evolution of different elements indigenous and colonial, diverse cultural, natural and artificial, rural and urban within the context of the urban landscape.

In a globalised world, with very many complexities in the ideology of what is the ideal way for inclusive design and the use of the urban space, the idea of hybridity seems to be an approach that has the potential to deal with current urban conditions where the old boundaries of urban and rural are continuously being

blurred, the conditions of city and nature or even city and agriculture, formality and informality are not as clear-cut as before. This complexity is expressed by Rem Koolhaas (1995) in his description of the new urbanism that will embrace complexity and hybridity in the urban landscape and not deal with it in the sense of the orders and certainty as is the case of the old school urban planning and management principles.

"If there is to be a "new urbanism" it will not be based on the twin fantasies of order and omnipotence; it will be the staging of uncertainty; it will no longer be concerned with the arrangement of more or less permanent objects but with the irrigation of territories with potential; it will no longer aim for stable configurations but for the creation of enabling fields that accommodate processes that refuse to be crystallized into definitive form; it will no longer be about meticulous definition, the imposition of limits, but about expanding notions, denying boundaries, not about separating and identifying entities, but about discovering unnameable hybrids; it will no longer be obsessed with the city but with the manipulation of infrastructure for endless intensifications and diversifications, shortcuts and redistributions – the reinvention of psychological space. Since the urban is now pervasive, urbanism will never again be about the new only about the "more" and the "modified." It will not be about the civilized, but about underdevelopment."

Rem Koolhaas ¹³

Urban Hybridization is important for the creation of places with the capacity to generate urban transformations. Which brings to light ideas of how the fragmented landscape can be stitched together along different strategic locations at a local scale but with a territorial impact when replicated as is the case with the theory of urban acupuncture. The acceptance and enhancement of public spaces in a hybrid manner allows them to be versatile in the way the space can be used creating opportunities for interaction of the

¹³ KOOLHAS, R. & MAU, B. 1995. S,M,L,XL, OMA, The Monicelli Press, New York.pp. 959/971.

different populations from the diverse cultural backgrounds.

- Margin Areas; the adhesive role.

"The more complex territory is where the city breaks along its borders, where the scar tissue of his immense body are creating a new skin, with surprising and unexpected features." Gabriele Basilico.¹⁴

Margin areas are the in between spaces, the landscapes and the open spaces that belong to 'no-one' and to everybody in the sense that they are a neutral ground that is exploding with potential.

(Treu 2006) According to her, margins are the spaces that always correspond to specific situations that are directly linked to the relationships and proximity of the spaces that they separate. Accordingly they are instrumental in the orientation and strate-

14- BASILICO, G. 2007. Architettura, Citte, Visioni. Riflessioni sulla Fotografia. Mandadori Bruno. Milano.

Fig. 4 Residents make their own public space in New Brighton. Behind the informal shacks in the foreground are newly built houses, and behind them are two-story barrack buildings from the apartheid era.



gic decisions for the solutions that are required for their territorial transformation.

These spaces are very important in the role they play as limits but at the same time they are the invisible glue that binds the different areas and zones both physical and psychological that they separate. These in essence are the adhesive elements or the stitch zones of the different components of the fragmented urban landscapes.

(Palazzo 2006) Interventions in the margins should take into account the fact that they are complex products of a dialogue, correlations between different entities, urban processes and urban connections. For this reason, strategic projects in these areas should be based on close analytical studies and interpretation of the transformations. At this specific individual scale, the margins are the areas where there is potential for interactions between the different heterogeneous elements, a sort of positive friction and interchange of the characteristics and attributes of the different components one to another.

*Beyond the formal aspect, it is the programmatic and temporal dimensions of the patchwork diagram which are the most interesting; that is, for various durations, the interaction between activities which usually remain apart from each other, between uses and spaces which are rarely connected.*¹⁵

This state of resultant landscapes within margin areas is therefore a potential feature that is not as clean cut as the typical formal urban landscapes that are the common intervention contexts of landscape architects and urban designers.

These areas of transformation from the complex matrix into

15
Skira.

ZARDINI, M. 1996. Paesaggi Ibridi: Un Viaggio nella Città Contemporanea.

the hybrid, the margin interventions in the landscape are the stitching points and the crucial areas where the hybridisation between the different elements are activated. They are the areas that are in constant contact between one landscape type and the adjacent one. The role of these boundaries is vital because it is within these overlapping landscape layers and tissues that materials to ignite a chain reaction for renewal of the quality of the landscape and its inhabitants exist. The scale of approach could be at a micro or macro depending on the scale of the territory in question and the factors social, economic and environmental that come into play.

Discussion of Literature Review

The literature available on tangible landscapes is quite wide compared to that on the intangible values of landscapes which has gained a strong footing in the last few decades. This further reinforced by the particular attention given to the discourse on cultural landscapes and the issues surrounding cultural sustainability and identity connected to territory.

The literature available on the landscape architecture field and its direct impact on the quality of life was minimal and most of the references to this were tied to the links to the field of environmental science and issues of climate change as directly impacting the physical and mental welfare of people. There is a significant gap in the literature available on the generic idea of the spatial component pertaining to the quality of life in not only that of landscape architecture and urban design but the built environment field in general.

On the otherhand, the significant literature available on the subject of landscape typology is owed to the field of geography that has made advances in trying to categorise landscapes accord-

ing to types.

In Hybrid Landscapes as a typology, the literature was based on the developments of Zanni that recognises the constant transformational status of cities and categorises urban hybrid landscapes according to the four principles; the morphological composition and urban fabric, functional hybridisation within the same area, re-assembly of different urban types within an area, the intermingling of public space that is the built and unbuilt forms. In this research, this same theoretical understanding of hybrid landscapes was taken based on the categorisation but developed into the three groups of morphology, functionality and the experiential or phenomenological aspects.

Fig.5 The green margin space between the Babilonia Favela and the formal area next to the Copacabana beach in Rio de Janeiro.



3. Case studies

As already mentioned, the process of Rapid Urbanisation is taking place at a high rate in Asia, Latin America and Africa as populations grow and an increased rate of rural-urban migration as compared to European Cities. The process in some countries like China is further accelerated by government policy and systems that are set in place to encourage people to leave their rural homes and move into the city through providing the promise of a better quality of life in the urban areas as opposed to that provided in the rural areas. This is not only in Asia but in Africa as well as seen in the case of the government of Rwanda that is promoting the policy of actively increasing the rate of the urbanisation process to encourage the greater part of the population to move to the urban areas basing on the positive attributes urbanisation can have for a geographically small country that has one of the highest population densities in the continent.

Cities have found themselves woefully unprepared in the face of the spatial and demographic challenges associated with urbanization, not to mention those of an environmental nature. ¹

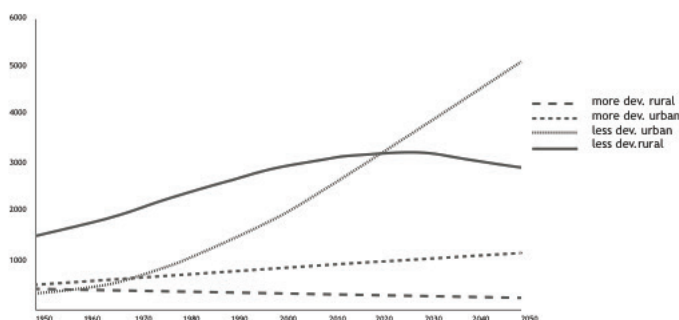
UNHABITAT.

¹ UNHABITAT. 2013. State of the World's Cities, UNHABITAT 2012/2013, Prosperity of Cities. Routledge for United Nations Human Settlement Program, Nairobi

In the developing world, urbanisation is taking place in form of informal growth without clear planning regulation and effective public policy, partly contributing to the negative impacts of climate change, environmental and socio-economic impacts. In the global south, the greater part of the urbanisation process is reported to be taking place in the informal sector with a relatively big portion of these urban dwellers living in informal settlements. The situation in Sub-Saharan Africa is quite significant with close to 90% of city growth taking the form of informal settlements in areas that are not suited for development increasing their vulnerability to disasters.

However it is important to mention that some of this informality that addresses the gap in urban housing is also taking up the form of backyard shacks within formal and established areas that raises the urban density in these areas and creates a strain on the services provided in the area.

Fig. 6 The urban growth trends. Data from: State of the World's Cities 2012



The Latin American Landscape Initiative (LALI 2012) is a document towards an eventual landscape convention as is the case of the European Landscape Convention. It recognises the risks on the landscape that is paused by the accelerated economic growth in the region towards the end of the last century and into the current century. This awareness of the fact is a relatively accurate representation of the situation of the approach to the increased recognition of the value of landscape in the culturally diverse region. The initiative which is a step towards a possibility of an International Landscape Convention, seeks to create a regional consensus on landscape policy, integration of landscape in public policy, multidisciplinary and trans-disciplinary frameworks, regulatory frameworks, participatory approaches and recognition of the human aspect in the landscape discourse.

Selection of the two case study Cities

The criteria for the selection of the case studies was based on factors that were tied to the different :

- Location in Latin America and Africa
- Population and Population growth
- Significant level of informal settlements in the urban landscape
- Extensive research on the urban
- Cultural Diversity

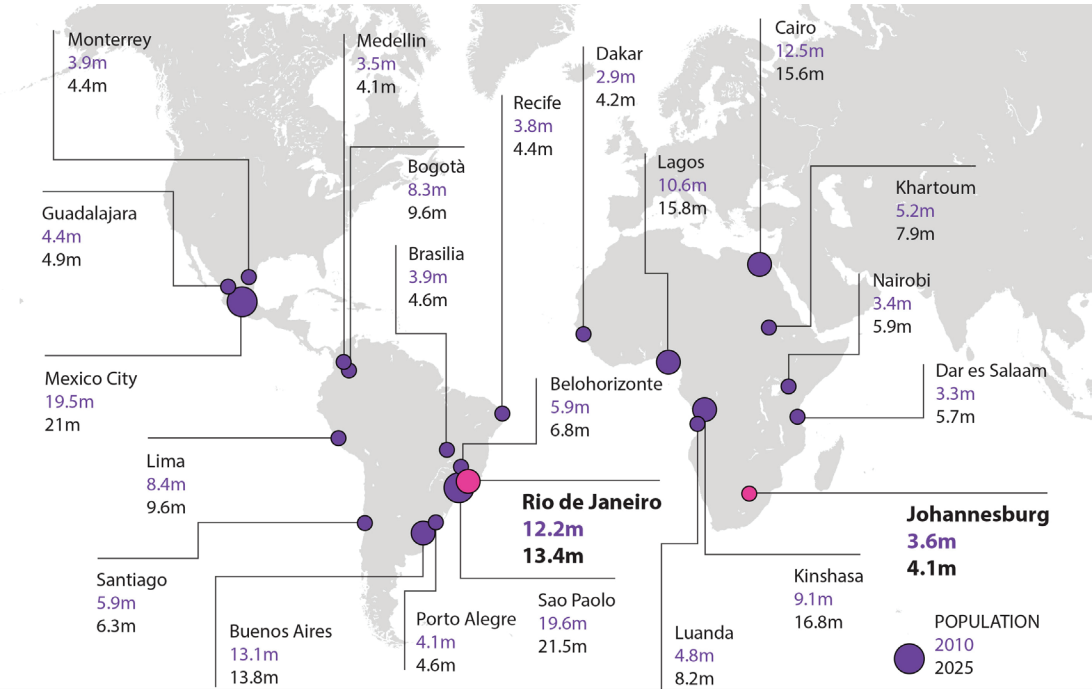
In this research the cities in expansion compared were those with a p over 1 million residents as of 2009. This limited the numbers of cities that were to be considered in Latin America and Africa to a considerable number. These included:

- Africa; Kinshasa, Luanda, Cairo, Lagos, Johannesburg, Khartoum, Dar es Salaam, Dakar and Nairobi.
- Latin America; Buenos Aires, Rio de Janeiro, Sao Paolo, Mexico City, Bogotà and Lima.
-

Taking into consideration the criteria, the potential case studies were eventually narrowed down to two cities; Rio de Janeiro in Latin America with the edge over the fact that there is a significantly substantial amount of research and implemented projects on the urban landscape, the second was Johannesburg that was also chosen for having a similar impact on the African continent. The influential factor on policy in their regional context was also an added advantage in this process of selection.

Fig. 7. Map of the cities in Latin America and Africa that were selected.

In line with this, Brazil is one of the leads in terms of the landscape architecture and urban design discourse in Latin America.



The country is well aware of the complex context of the high rate of informality, nature and the diversity in culture as its heritage. Brazil, the largest country in South America, is a nation where different government policies have been directed to the prospects of cities that are more socially inclusive and at the same time create an awareness of the role of cultural diversity, nature and planning for the mitigation of rapid urbanisation negative impacts. Brazil also is relevant to the discourse of urban hybrid landscapes for it's strong contextual element of nature that is incorporated in the urban landscapes as well as being a strong criteria in the way the country is blessed with natural resources that directly affect the country's social-economic situation. It's leadership role in the continent is further reinforced by it's high economic growth rate and influence at the global level as part of the BRICS block of countries (Brazil, Russia, India, China and South Africa). The increased urban growth can also be viewed in the fact that it is a host country for international events like the Olympics in 2016 and the World Cup in 2014. In this way the Brazilian experience is one of the inspirational cases when it comes to urban and landscape policy research connected to informality and urbanisation in the global south. Rio de Janeiro, the most renown of the Brazilian cities is very particular and presents a strong case for the manner in which the city is dealing with the urban issues of nature, socio-economic inequality, informality and social diversity.

South Africa on the other hand carries more or less a similar exemplary role in Africa and in particular Sub-Saharan Africa when it comes to urban and landscape policy and planning. South Africa is one of the countries with the high economic growth rate as one of the emerging economies of the BRICS (Brazil, Russia, India, China and South Africa) countries. It is also one of the most urbanised countries in Africa with increasing urbanisation in the

country owing to the high immigration rate as a result of the fast growing economy since its independence and end of the era of Apartheid in 1994. With the end of apartheid, there was a national question facing most sectors and in particular the built environment sector; how to face the huge number of problems that came with the change of dynamics at both the public and private sector. Johannesburg the main city of the Gauteng region is the city with the highest population in South Africa and a very culturally diverse city with a high urbanisation and immigration rate.

3.1 Rio de Janeiro

3.1.1 The Establishment of the Portuguese Colonial City

The Portuguese first landed in what is today present day Rio de Janeiro in 1502 on Guanabara Bay while on their quest for the 'Brazil wood'. Fifty years later the bay was taken under French occupation for the next two years as part of the efforts to establish a French colony.

However when the Portuguese finally regained control of the area, they founded city on the first of March 1565 as Sao-Sebastiao do Rio de Janeiro and was eventually moved two years later to the mainland which was safer from attacks by the indigenous people and more importantly attackers approaching from the sea. This inevitably led to the increased settlement on the hills with economic growth due to the sugarcane plantations.

Fig. 8 The view of the complex landscape of Rio de Janeiro as seen from the top of the Rocinha favela.



high level of infrastructural growth and construction of the city in order to accommodate the European tastes of the new elite royal class society. A significant proportion of this new growth in population included African slaves thus increasing the racial diversity of the city. At this point in time, the city was the new capital of the Kingdom of Portugal and with this new prestigious level came the socio-economic elevation of the city and the port. The increased economic and urban growth of the city attracted a significant level of immigration from Europe for Europeans trying to find their fortune in the new world. This was from all over Europe with different 'European cities' finding their footing in the nation for instance the Swiss were based in Nova Friburgo, the Germans in Novo Hamburgo and the Italians in Sao Paolo.

In 1822, Brazil gained independence from the Portuguese and there was a new surge in development and economic growth in the city with increased population growth and infrastructural

Fig.10. The new waterfront renewal projects for the 2016 Olympics.



development in form of sanitation, trains, trams and communication. After independence, slavery was abolished and therefore the slaves who were working in the plantations were free to resettle and look for new opportunities in the city leading to the growth of the urban poor. When the country became a Republic in 1889, the bourgeois class collapsed and lost their status with Rio de Janeiro becoming the capital of the new Republic. They were displaced from the city centre and their houses were turned into public properties to accommodate the public services and social housing.

In the 19th Century the country experienced an economic crisis due to stiff competition in the sugar production market from other areas of Latin America. To add to this, the gold and diamonds resources were dwindled due to over exploitation leading to a shift towards an industrial economy. After World War II the city completed its transition from an agricultural to an industrial economy that led to a significant growth in the city in terms of population and the urban area. The controversial concept of favelas then became an even more relevant issue as more people who moved to the city to work in the factories needed cheap affordable housing that was not in supply in the formal city. In this the favelas were an organic and informal solution to fill this housing gap and were located in the high risk areas of the city, however they were strategically located next to the source of work in the factories and the formal city.

In the last century the city underwent major changes including the transfer of the capital from Rio de Janeiro to Brasília in 1960 which was a major blow for the economy of the city. With this change the city lost its identity as the political and financial capital of the country and went through a brief period of socio-economic decline. During this period the city's population increased with a high rate of immigration from the northern states all looking to the

favelas to provide the housing supply resulting into a significant increase of the urban poor.

However the city in the 1990s went on a self improvement phase to revive the city image that was successful enough to invite and host major international events like the 1992 UN conference on environment and development of the Earth Summit, World Cup 2014, the World Urban Forum and the 2012 UN conference on Sustainable Development and the 2016 Olympics. These events have had a major impact on the city's urban landscape attracting international attention and in effect local attention on issues like inequality and the impact it has had on the city's urban form. Fig. 10 shows one of the squares that have been constructed in preparation of the Olympics.

3.1.2 Urban Growth Time-line

Around 1586, most of the urban expansion of the city took place in the area around the flat plains around Castelo and Sao Bento Morro. In the next century under the 1624 Dutch occupation, expansion went beyond to include areas through the hills of Castelo, Sao Bento, Conceicao and Santo Antonio.

Around the year of 1818, when the Portuguese royal family transferred to the city, marked the beginning of the period of strong colonial influence on the urban landscape of the Brazilian nation. There was a significant level of urban sprawl as there was a shift of indigenous high class members of the population from the city to occupy the periphery, a territory previously owned by the rural population. The social injustice that is currently manifested in the urban morphology of Rio de Janeiro has its roots emphasised at this time as the nobility settled in the centre and the periphery by the middle income population who previously the high class (In

the period before the royal population moved into the city). This was a form of displacement by the higher in the socio-economic status creating distinct blocks that reflect the income levels with over 500 new houses. This was the period that the city took on the European standard of the city lifestyle and culture with increase in the number of urban services like schools, hospitals, theaters, museums and libraries. This period was also when the building of the railway connecting the different agricultural areas to the port improving the growth of the agricultural sector that was thriving from the increase in the coffee and sugar production was initiated.

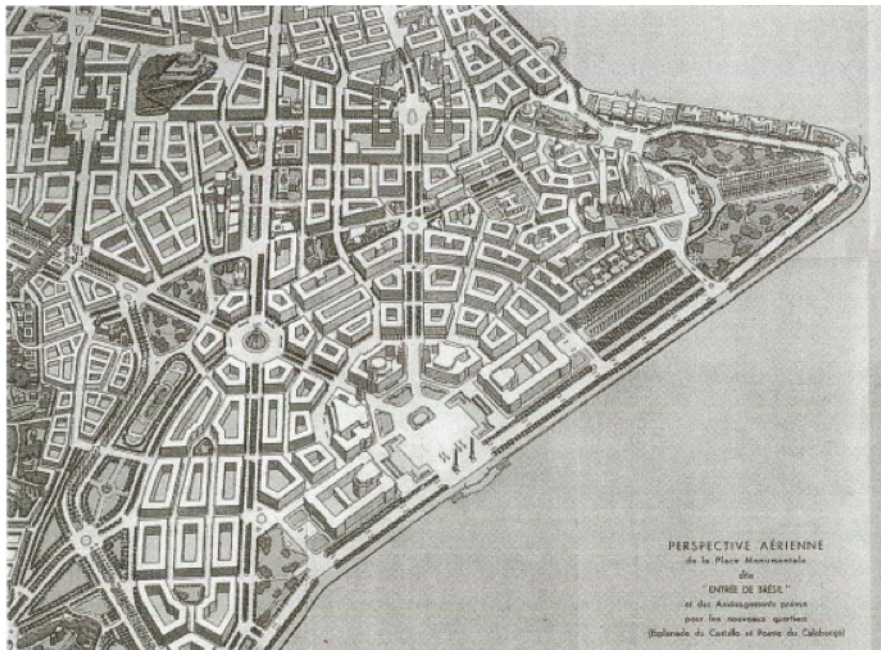
After independence the growth of a strong railway and infrastructure system catalysed the city's expansion to the other inland areas of the city effectively connecting connected the western coastline to the eastern coastline. The tram line and the railway increased the mobility of the citizens within the city and increased trade leading to the urban population growth of the city. With this new increased accessibility the southern coastline developed into another high income neighborhood and the poor were further displaced northwards and onto the hilly areas. This inequality gap in the settlement patterns was further reinforced by the increase urban poor population with the immigration of the Africans from the sugar and coffee plantations inland after the abolition of slavery in 1888. This marked the beginning of the term 'favelas' after the first settlement of low income former soldiers of the rebellion and former slaves in the city centre 'Morro da Favelas'.

1920 Passos Urban Renewal Modeled on Monumental European Urban Design

When the bourgeois class collapsed and lost their aristocratic status with the declaration of a republic in 1889, their houses and mansions in the city were occupied for public services and social

housing. This led to an urban decline especially seen in the sanitary and the urban quality of the city as the narrow streets and the sanitary systems were overwhelmed by the new occupants who were too many in number compared to what the services were designed to accommodate. With this, there was a need for an authoritative and territorial urban renewal approach much like the 1853 to 1870 Napolitan approach to urban regeneration in Paris with Haussmann. This was the background of the Passos Renewal Project (Fig. 11) for the city of Rio de Janeiro. Pereira Passos was the mayor of the city of Rio de Janeiro between 1902 and 1906. His proposal for the city was significant to the city's urban form as it was based on the demolition of large blocks to rebuild the city using open spaces, green areas and wide green Parisian avenues. This European city design approach was very much in tune with the city's new industrial revolution and economic growth. Some hills within the centre were demolished to accommodate the new urban area with

Fig. 11 Passos urban renewal remodelled on monumental European urban design source: Rizzo G.R., Chrysostomo M.I.J., Fridman F., Macedo W.L., Siqueira E.C., Citta Globale e Metropoli Terzomondista, Rio de Janeiro



it's new buildings. However the urban poor population was further displaced and relocated to the hills and areas which were unsuitable for construction in the city. The plan did not include a resettlement plan for the displaced poor from the centre and for this reason, the favelas were a suitable and favourable option for this group of internally displaced urban inhabitants. In the plan the industrial areas were relocated to the areas away from the city and the very prime southern coastal areas to the suburban areas and the urban periphery of the city. With the increase in the industrialisation, the population of Rio de Janeiro had since increased to a significant 2 million people but was still not planned for which was a substantial motive leading to the initiation of the Agache Plan.

Agache Plan

Technically the first known significant urban plan of Rio de Janeiro was the Plan Agache. It was an urban plan that was developed in the 1920s with the main objective of planning for the city expansion and also organising the urban form for the existing 2 million population of the city.

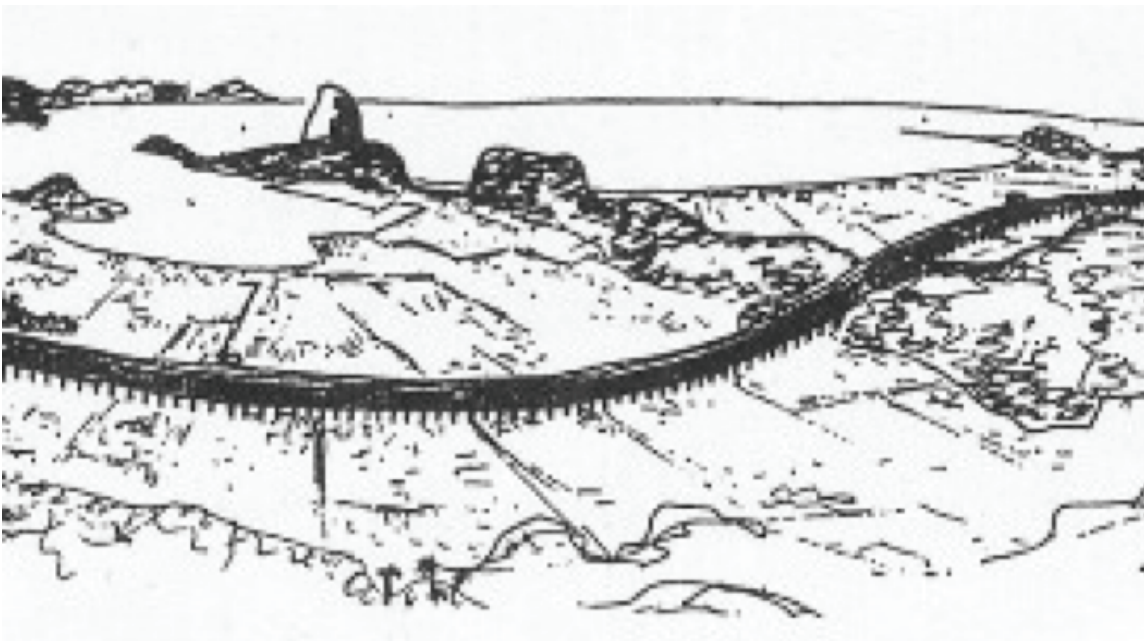
As was the trend in that period, the new Garden-city ideology was taking route in Europe and having an impact on other urban planning principles outside European continent. Based on the Garden city ideology, the Agache plan included to a great extent the principles of beautification of the urban landscape of Rio de Janeiro. The plan proposed the idea of using specific zones and effectively formalising socio-economic zoning principles. For this reason, the plan basically reinforced the areas of Copacabana, Botafogo, Ipanema, the southern areas of Gavea and Leblon into the real-estate prime areas for the high income earners and the middle income people were located in the suburbs. With the problem of favelas being stronger than ever the plan attempted to demolish these



Fig. 12 The city showing the execution of the Avenida Presidente Vegas. Source: Rizzo G.R., Chrysostomo M.I.J., Fridman F., Macedo W.L., Siqueira E.C., Citta Globale e Metropoli Terzomondista, Rio de Janeiro



Fig. 13 Le Corbusier's sketch for the city of Rio de Janeiro. Source: Rizzo G.R., Chrysostomo M.I.J., Fridman F., Macedo W.L., Siqueira E.C., Citta Globale e Metropoli Terzomondista, Rio de Janeiro



areas and rid the city of these neighbourhoods which was the then policy to addressing informality in the urban landscape. This plan was a reflection of the then mentality to informality in the city as an unwanted and ugly part of the landscape that was not considered to be part of the city. For this reason demolition was the desired approach with idealistic proposals to build new housing for the new populations.

1929 was the year that Le Corbusier had his first visit to Rio de Janeiro, he found the city not par to the ideals of the idea of European urban living with a population of close to 1.7 million people most of whom were poor and living a rural lifestyle within the city. This was the era that his protégé Oscar Niemeyer was practicing in Rio de Janeiro and together with Lucio Costa the three architects explored the city. This interaction was the dialogue of a modernist approach to landscape, urbanism and architecture that was well grounded at the time in Europe with the local Brazilian architects. It was during this visit that Le Corbusier's idea for the Planning of Rio de Janeiro was visualised in the sketches that he proposed an urban plan for the city focusing on the architectural object. This was the ideology of the period of the beginning of modernism being visualised in the urban landscape beyond the context of the European continent. Proposing an extensive linear snake-like structure that glided along the coast having a facade to the sea and the other to the natural northern mountainous landscape. The top of the plan was a transportation conduit and the snake was seen as an urban edge that acted as the urban boundary limiting the city's expansion as well as a container housing a significant amount of the population. This plan remained at an ideological level and was never further explored but it was an initiation of the ideologies of modernism in Brazil that would be part of the reason that her architects like Costa and Neimeyer would

be placed on a global platform.

1961 Doxiadis Plan

From the 1930s to the 1960s Rio de Janeiro experienced a heavy amount of industrial growth notably after the second World War. With this growth the city's population expanded both in terms of numbers of people in the city and vertical in terms of class differences, the favela settlements also grew with a total of 105 favelas with 139,000 inhabitants according to the 1948 census results. With the increasing residents, the urban predicament increased with the problems of urban congestion, transport systems that were inadequate to accommodate the increased amount of flow and an insufficient available housing for the residents.

This was the back drop for the need for the urban plan by the Greek architect Constantin Duxiadis that aimed to address the city's metropolitan area problems as regards to consolidating the city's urban infrastructure and controlling the car traffic of the city. The plan addressed the favela problem within the metropolitan area by proposing the then favoured policy of demolition and relocation in the long term period from within the city to the periphery.

With the economic growth in the city and extensive infra-structural growth, there was a significant level of urban renewal projects under taken by the Brazilian landscape architect Roberto Burle Marx projects. With his work, the city's urban landscape continues to be defined around his main landscape architecture projects like The Flamengo park close to the centre stretching out into the iconic waterfront projects at the Copacabana beach (Fig. 14 and Fig. 15) and the Ipanema beach with a uniquely Brazilian culture in the design and rethinking of public space.

Fig, 14 1960s
Roberto Burle Marx
project for the Fla-
menco Park and the
Copacabana beach.
Source: Brandão
Z., Urban Planning
in Rio de Janeiro: a
Critical Review of
the Urban Design
Practice in the
Twentieth Century



Fig, 15 Roberto
Burle Marx project
of the Copacabana
beach in 2015.



Municipal Decennial Master Plan

This plan was developed in the 1990s and was considered to be based on community participatory planning tools that provided the design and policies for the city's urban development including the issue of the urban poor and the informal settlements and the spatial inequality. The plan also proposed a social housing policy to deal with the issue of housing the urban poor.

In 1992 the summit conference Eco 92 was hosted in Rio de Janeiro and this catalysed the renewal projects of the old public spaces using landscape interventions that included the upgrading of the water front area along the coastline. The coastline project renewed the social integration within the city as the beach was one of the key areas where most of the city's population went regardless of their racial, social or income status.

The Rio Cidade project was also put in motion, this was a project in reaction to the negative publicity that the water front renewal project was receiving for the fact that it was located in an elitist area that did not need much improvement in the first place. This project based a lot of its ideology on the theories of Jane Jacobs and Kevin Lynch; on the ideas of the importance and relevance of the streets and public spaces in social integration. This project therefore focused on the renewal of the inner city's streets and public spaces to attract activities and socio-cultural interaction and reduce the high crime rate of the city that was a big element of the poor neighbourhoods of the city. This plan focused on the people aspect of the city which was in contrast to the previous plans that were mainly driven by grand infrastructural and urban renewal projects.

Master Plan of Rio de Janeiro 2011

The current master-plan of the city that has a ten year validity period provides for the city urban policy and covers the entire city of Rio de Janeiro with focus on the urban growth and city developments directed towards the protection of the urban landscape that includes the natural areas within the city. The main goals of the plan include:

- Strategic location of public services for the members of the city.
- Approaches to the protection of the high risk landscapes and natural slopes of the city.
- Increase and incorporate bicycle paths and lanes to reduce the vehicular traffic within the city.
- Creation of a legal framework to protect the natural areas within the city.
- Emphasis on the landscape of Rio de Janeiro as the primary value of the city.
- Policies to promote holistic sustainable development of the city involving social equity, protection of the environment and the urban landscape, cultural and historical heritage of the city and preservation of the city's cultural landscape.
- Accessibility to the natural landscape of the city and good quality of the urban environment.
- New constructions should abide to the regulations that conserve the integrity of the natural landscape.

The era that began in the 1990s that marked a paradigm shift from the infrastructure based planning of the earlier decades to an urbanism that focused on the holistic aspect of the physical urban landscape, the cultural and social aspects continued to date with Brazil becoming a sort of laboratory for urban discourse and design

experimentation. The current situation is based on the revival of Urban and landscape design as the main tool for the renovation of public space has emerged as one of the principal features of current policies.

3.1.3 Stratification of the layers Population

Rio de Janeiro is an ethnically diverse city owing to it's long history of immigration. According to the Brazilian institute of Geography and Statistics 2010 census, the majority of the inhabitants of the city of Rio de Janeiro have European ethnicity. Of these Europeans the majority are of Portuguese, Italian and the Spanish origin. The city has the majority of Portuguese people living in Brazil as it was from historic times the favoured location for immigrants from Portugal. Another huge proportion is the multiracial group which has the people with African and European ancestors while the smaller of the three main groups are the African populations the majority of which are the descendants of the slaves who were working on the sugar plantations.

Race and Ethnicity in Rio de Janeiro

- White 51.2%
- Pardo (Multiracial) 36.5%
- Black 11.5%
- East Asian 0.7%
- Amerindian 0.1%

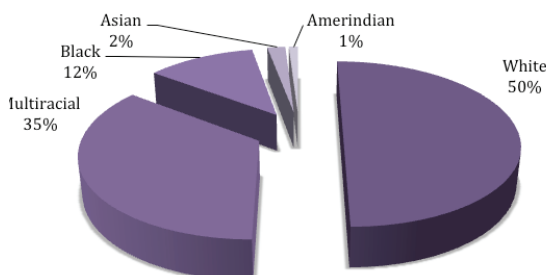


Fig. 16 The demographic racial breakdown of Rio de Janeiro. Census.

RIO DE JANEIRO

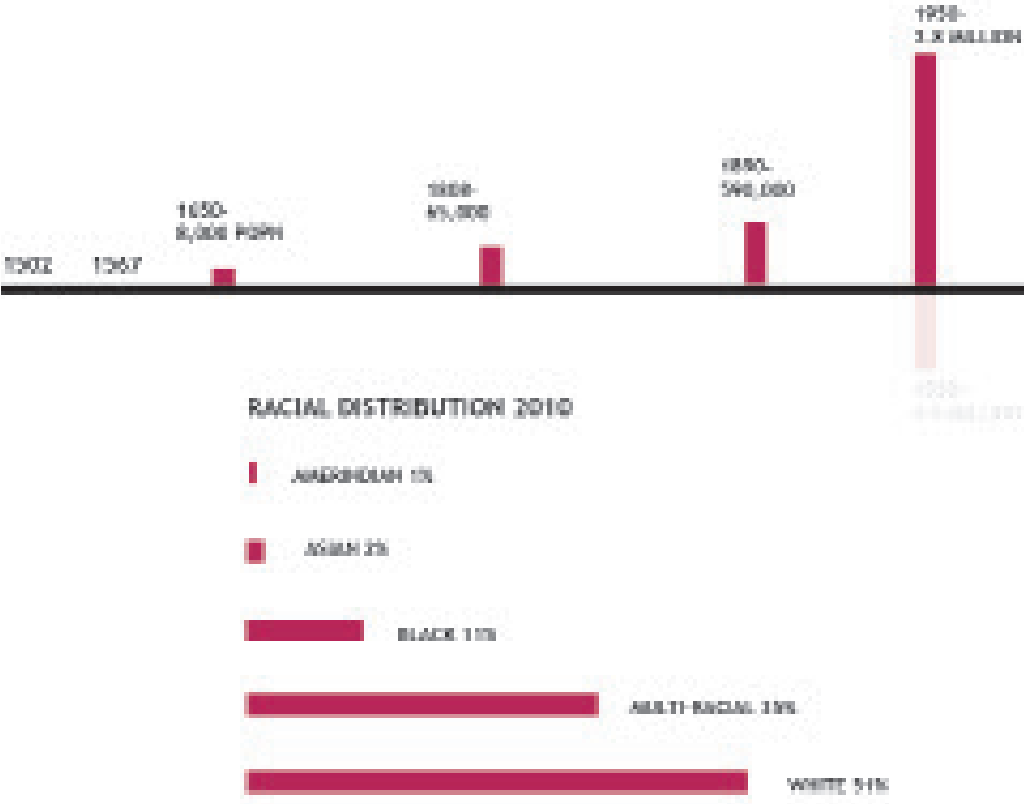
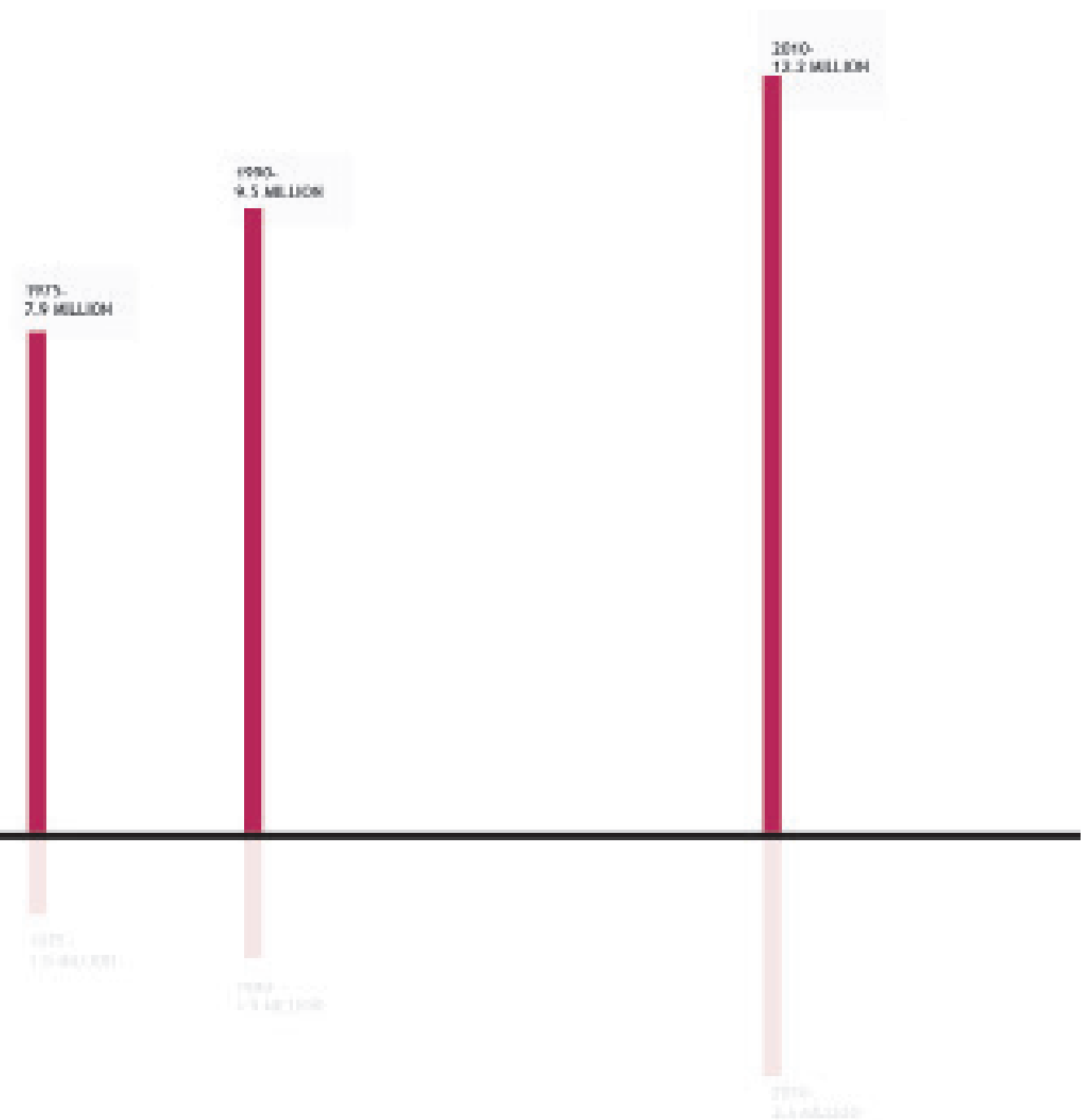
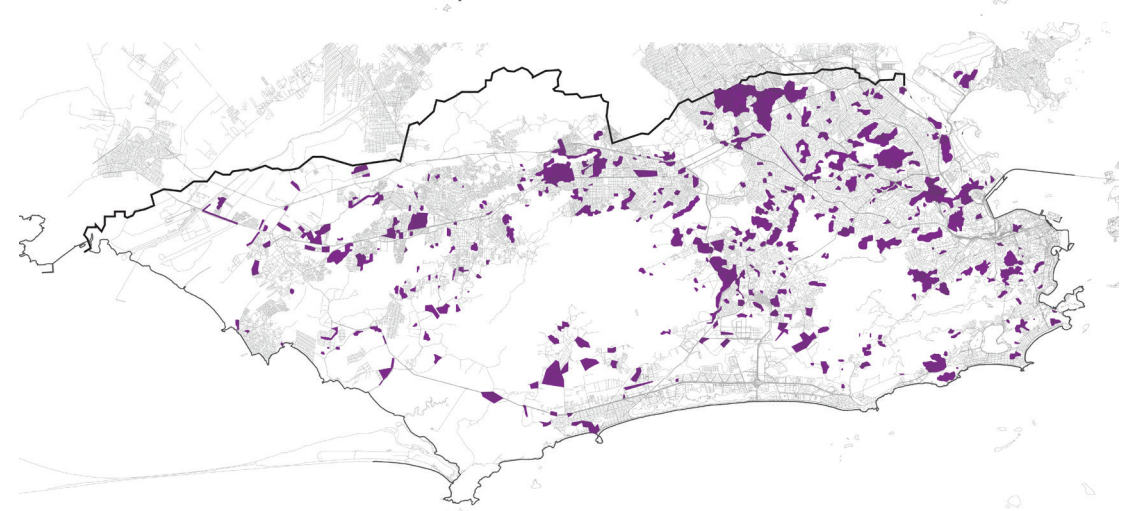
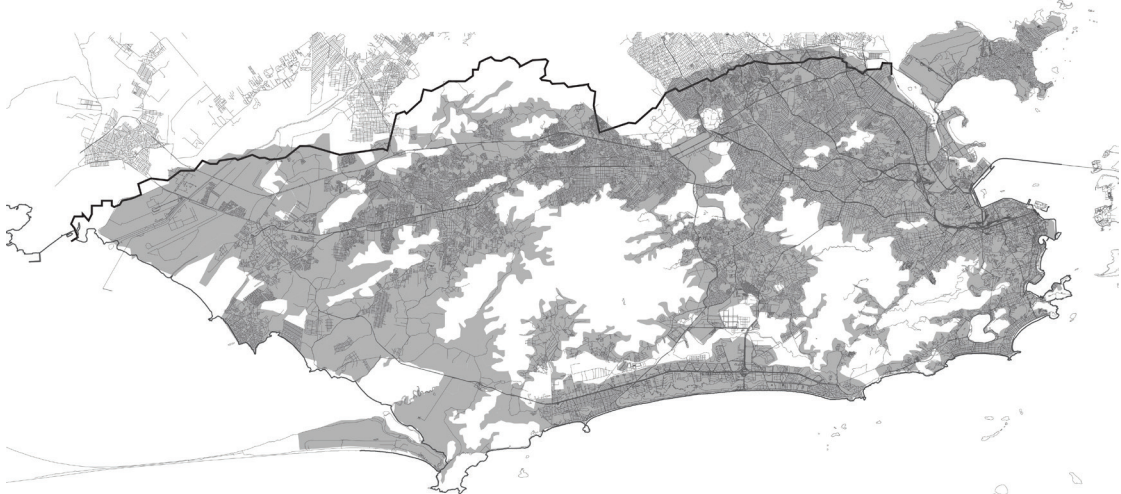
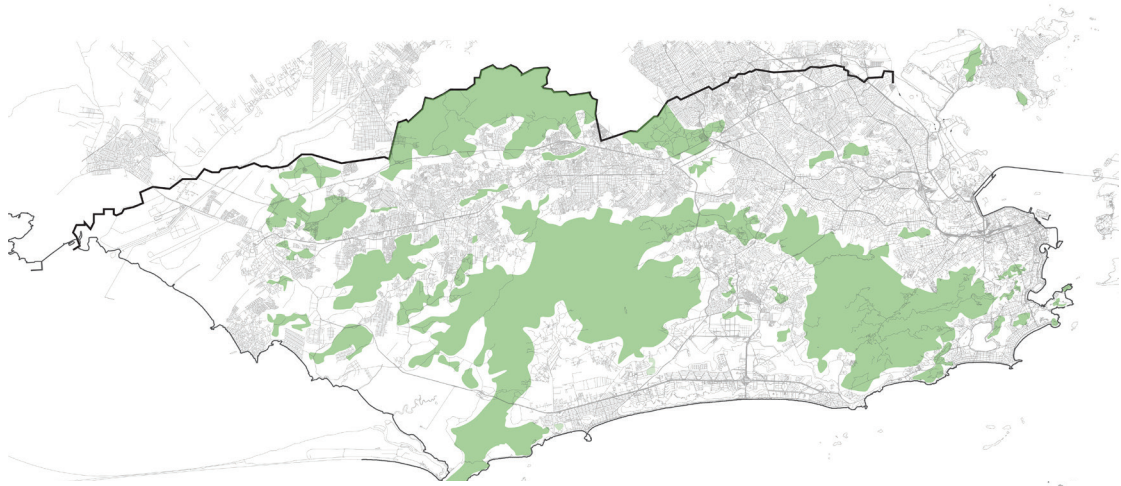
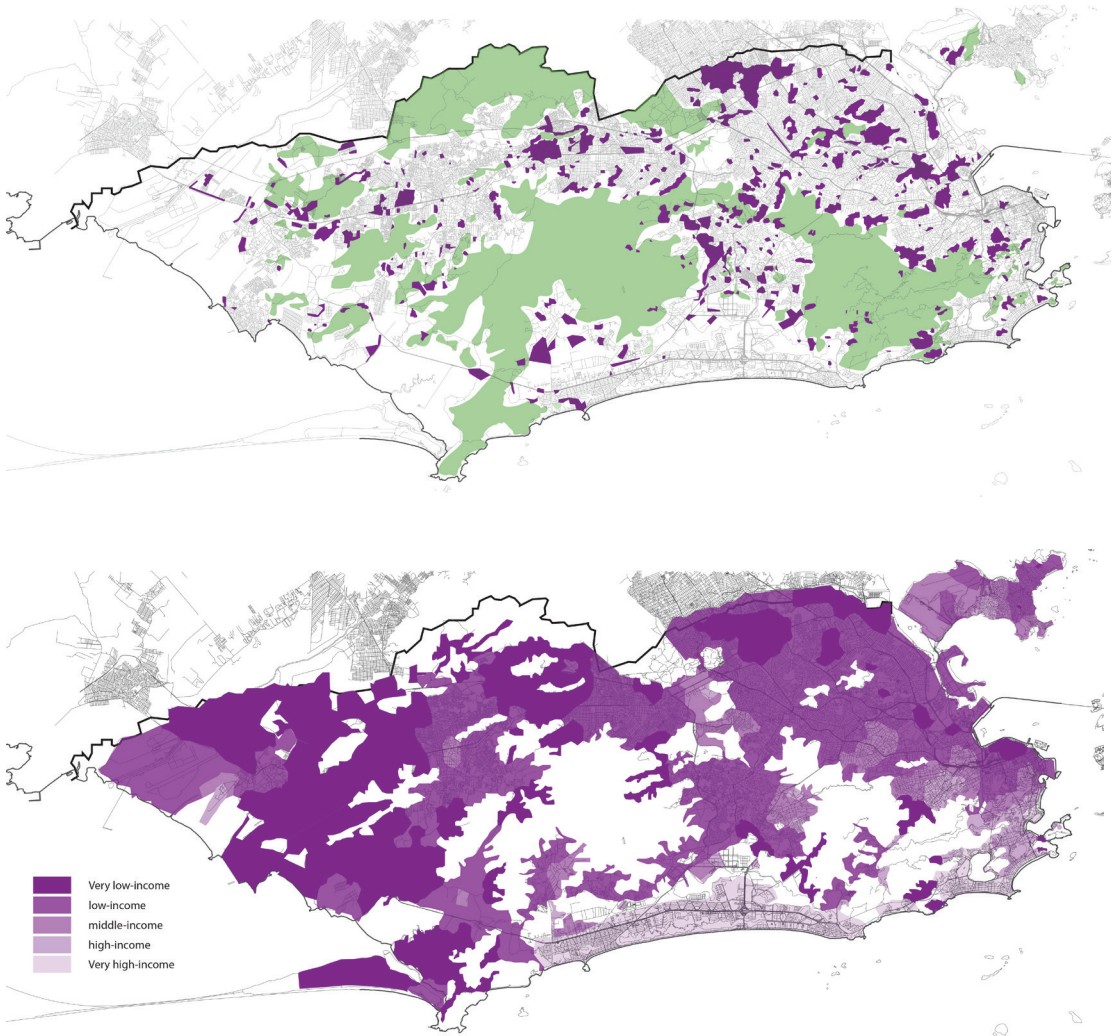


Table 2. Population Growth of Rio de Janeiro







• Fig. 17 Map of Rio de Janeiro's urban hybrid landscape stratification;

- 1. Natural green
- 2. Urban Built-up area
- 3. Favelas in the landscape
- 4. Nature, Favelas and the built form
- 5. Low income/High income inequality on the landscape.

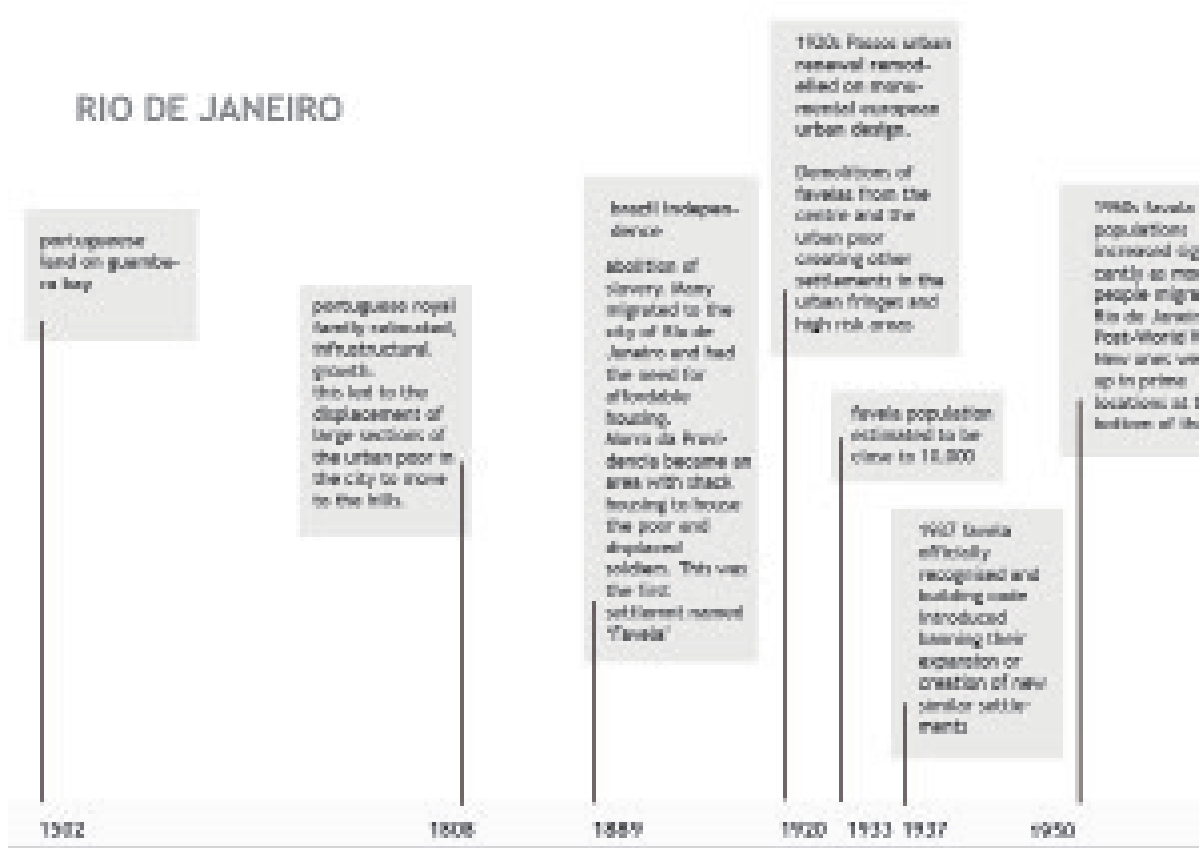
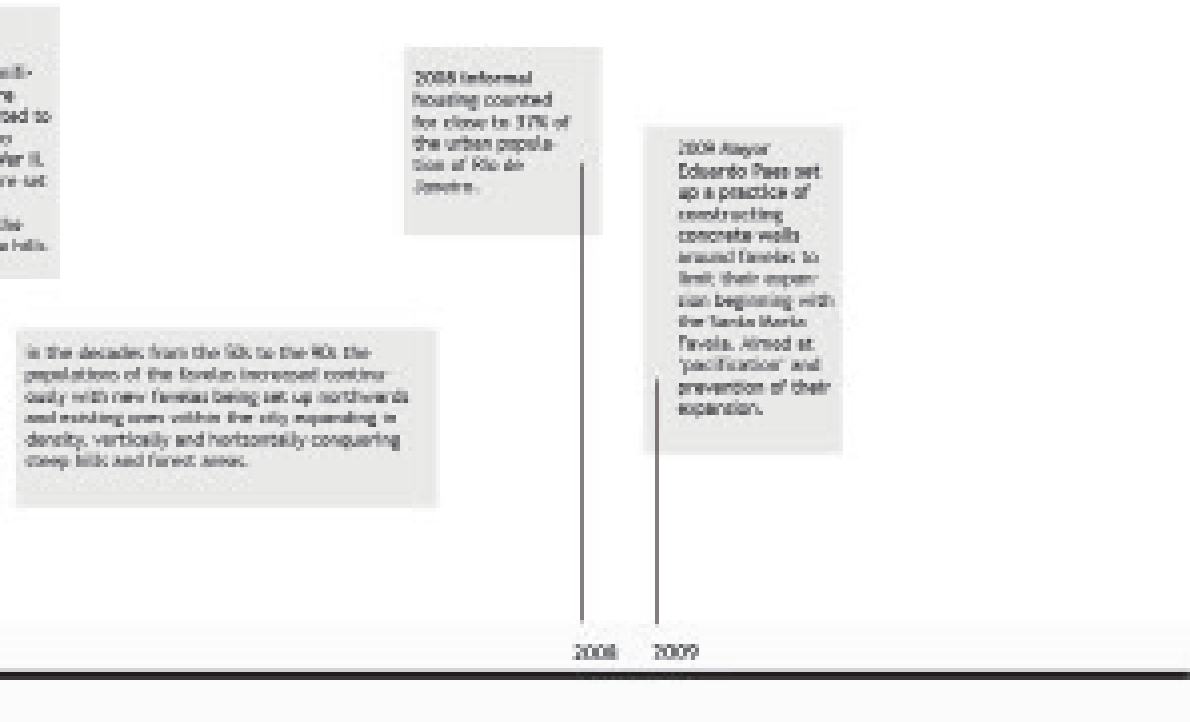


Table 3. Informal Settlements Timeline of Rio de Janeiro.

urban renewal poor colonial dwellers relocated to previously deserted hills- favelas

policy towards the favelas were more inclusive and focussed on in-situ development in the years after the dictatorship



The main street in the Maré favela complex also known as the 'Cada 1313'. Located in the Northern Zone it is one of the favelas located in the flat areas close to the industrial area.

A youth centre with sports facilities located in the pacified Favela Marépolis that is part of the in-situ development of the favelas by providing services.

The strip of green that acts as a buffer zone, a vertical separation with a concrete wall that physically separates the Favela Marépolis and the affluent residential area of the Copacabana area in Rio de Janeiro.

Most of the people of European decent live in the formal and expensive neighbourhoods of the city around the south and the beach area. While the northern inland areas are occupied by the Multiracial (Pardo) and the African populations. With the urban poor living in the favelas further away from the city centre or along the steep slopes of the mountains within the urban fabric of the formal city.

Historically the indigenous people of Rio de Janeiro were ethnic tribes that became loyal to either the Portuguese or the French and after the war between the two groups in the 16th century, the Portuguese eliminated the ones loyal to the French and assimilated their own loyalists. The African population on the other-hand are the descendants of slaves who were brought to work in the plantations from Angola and Mozambique which were the Portuguese colonies in Africa. In an interview with one favela inhabitant, he was convinced that there is close to no unemployment in the favelas because in his opinion the people in the favelas who are willing to work are employed, the ones who are not employed are not looking for work and are either employed at home like housewives, retired or into the drug and narcotics business or violent gangs within the favela.

3.1.4 Geomorphological Analysis

The urban development of Rio de Janeiro is controlled by the natural attributes of the topography, the forests and the water. The very particular natural Carioca landscape that is composed of many steep rock hill formations covered with thick forest vegetation and the ocean which form a rhythmic interaction is the very essence of the intrinsic genius loci of the city. The rocks define the urban form of this extensive city that only expands at the will of nature. The urban settlement form is more or less a complex result of the

symphonic relationship between the dominant Carioca rock hills of natural forest and the submissive built form. Within this complex nature and built-up art form is also the complex dimension that is added by the dynamics of the favelas and how they intricately twine along with the formal built-up areas of the city. These informal settlements in the case of Rio de Janeiro are more than often located along the margins between the formal city and the natural areas often in the high disaster risk areas but always close enough to the sources of employment which are often in the formal city.

The city which is around 1,182 square kilometres in area is located on the western coast of Brazil along the Atlantic coast and with its central historical core at the inlet of the Guanabara Bay. The city centre is located on the relatively flat plains of the bay while the vast part of the city is situated on the plains of the extensive northern part of the city with some settlements along the hilly and rocky areas of the city. However the northern part of the city is separated from the south by the coastal mountains that are the extension of the Serra do Mar mountains that are part of the Brazilian Highlands. These mountains at the beginning of the construction of the city were a barrier that separated the two regions (the north from the south) however with improvement in infrastructure in the 20th century they were connected by tunnels and roads.

The climate of the city is a tropical monsoon climate characterised by periods of heavy rain during the winter months between December and March and high temperatures during the summer months. The heavy rains pose a risk to the city in the form of landslides along the steep slopes of the city. The main rivers in the city are the Cabuçu with other lagoons, Marapendi, Lagoinha and the Rodigo de Freitas. The city of Rio de Janeiro has a significant portion of it being on the islands with the main island being Laje.

The vegetation of Rio de Janeiro is very green with the a notable expansion of natural urban forest. The Tijuca forest is located in the centre of the city around which the rest of the city forms itself. The urban landscape of the city of Rio de Janeiro can be perceived as a complex network of protrusions of coastal ranges with natural forests around which the urban settlements stretch out. This also defines the spatial segregation on the urban landscape as the rich neighbourhoods are located in the flatter plains with the favelas existing on the slopes of the mountains or along slopes close to the sea. However further inland where the topography is relatively uniformly flat, some of the favelas are located in the flat planes.

3.1.5 Urban Footprint on the Landscape

Rio de Janeiro expanded from the city's central area at the Guanabara bay taking the direction towards the north and west beyond the Tijuca forest. This was only made possible when access to these areas was improved with the introduction of more efficient transport systems like the railway and the tunnels that cut through the rocky hills. From comparing the satellite images of the city of Rio de Janeiro, the city has expanded and sprawled around the mountains and the Tijuca forest with most of the new built up developments taking place in the Northern part of the city of Rio de Janeiro. This mainly took place in the 1970s during the industrial boom of the city along with the increased population growth. Gated communities with extensive urban design open spaces also contribute to the high land consumption as they became a popular typology of housing solution.

Although favelas also expanded to a certain extent conquering new unclaimed territories in the city, their land consumption level is relatively lower owing to the high densities in the favelas. The legal framework favoured this in that it states that once a

person has settled on a plot of land for a period of 5 years or more without being evicted, he has the right to claim ownership of the property and it is on this policy that most of the new favelas pop up.

3.1.6 Hybrid Landscape of Rio de Janeiro

In the landscape, nature interlaces with the built urban form, infrastructure crisscrossing with the natural landscape, huge tunnels dug through the rocky hills to create fast access across the hills. Nature in Rio de Janeiro is paramount, the fixed organic grid around which the human beings maneuver in their construction projects and settlement patterns. It is the protagonist of the landscape of Rio de Janeiro, the humans and their city are the secondary players that obey the rules set by the very strong presence of the rocky hills, the ocean and the forest. In all this there is no particular distinction between the city and the nature as it is all interlaced into one urban and natural form with both the built form and the nature having interlocking tentacles.

However to navigate the strong forces dictated by nature, the city has made relatively fundamental interventions in terms of immense infrastructural interventions. For example the construction of an expansive bridge that stretches across the Guanabara bay linking Rio de Janeiro to Niteroi. All this infrastructure with motorways, trains (both on ground and underground metro-line), tunnels and bridges crisscrossing the city creating connections and at the same time creating barriers between closely located neighbourhoods at the local scale.

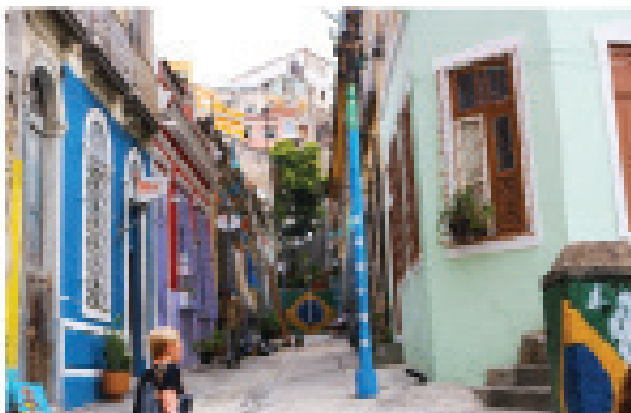
The Favelas on the other hand seem to defy visual gravity by claiming uncharted territories on the steep hills creating passage ways of endless intertwining networks of stairs conquering the

landscape was formed of mountains, sea, and with a cover of tropical forests.

plantations and mining in parts of the plains destroy forest

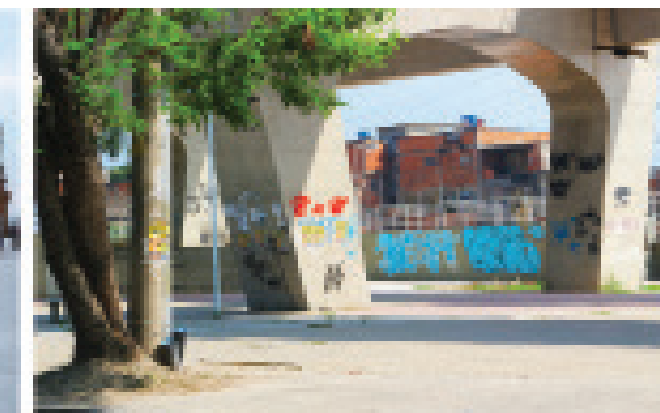
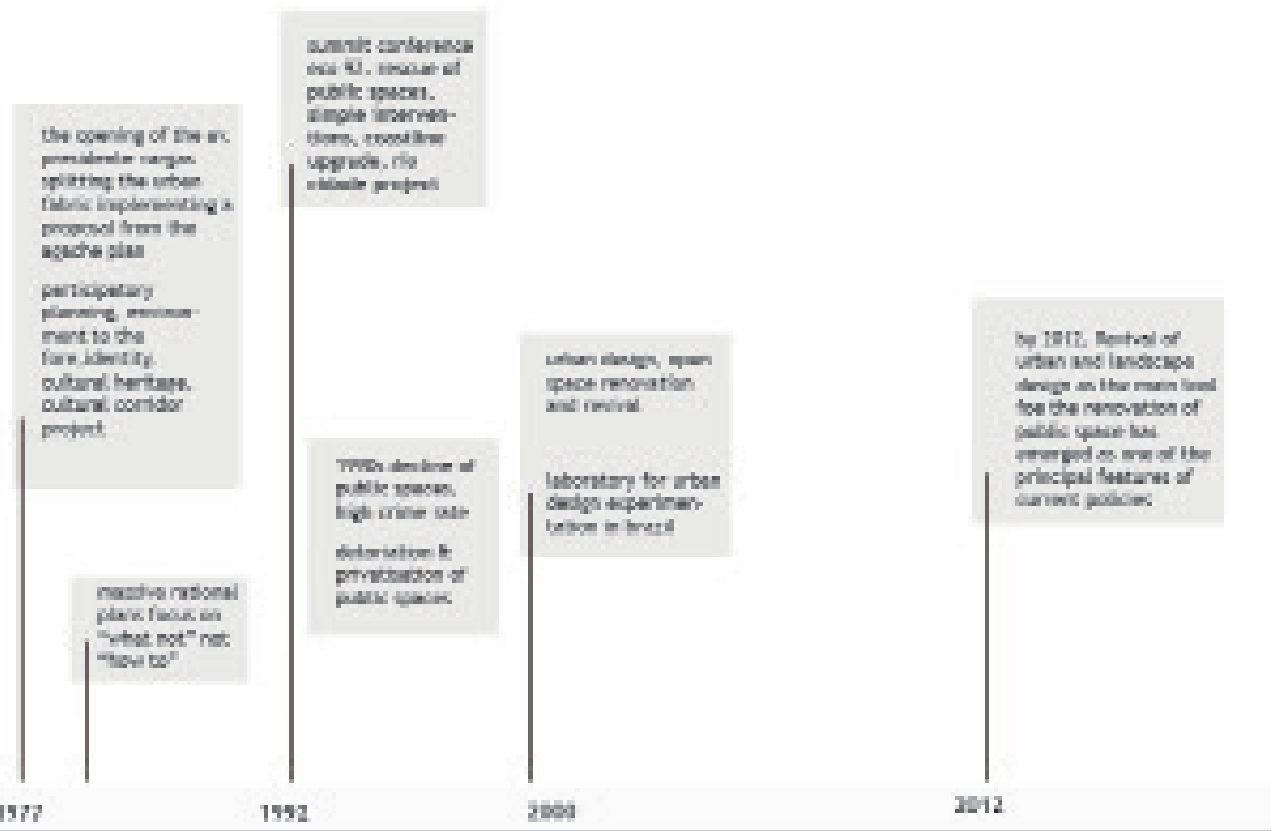
urban settlement constrained by nature

RIO DE JANEIRO



urban renewal poor colonial dwellers relocated to previously deserted hills- favelas

Table 4. Hybrid Landscape Timeline of Rio de Janeiro



The Quilombo district of Rio de Janeiro is a culturally rich area of the city for its links to being very close to the history of the Black population of the city as well as the role of samba in the city.

One of the new urban landscape projects that were designed as part of the city's preparations for the 2016 Olympics in Rio de Janeiro.

The new landscape intervention that was inspired by the Rambla in Barcelona that occupies the strip formerly known as the 'Coca Strip' after the drug related gun violence common to it within the favela complex of Morhomen in the North Zone of Rio de Janeiro.

1. Central Business District

The central Business of the city is located at the bay.

2. The Ocean

The relationship between the land and the ocean is a very fundamental in the urban landscape of the city as it is a key factor in the land value and settlement patterns of the built-up area.

3. The Mountains

The mountains and the urban forest of Rio-de-Janeiro dictate the urban morphology of the city with the settlement patterns of the city with 'asfalto' in the flat valleys and favelas on the slopes. Creating vertical divides in the urban fabric.

4. The Built-up Area

The built-up area occupies more of what is left from the mountains in the flat areas. Includes both the formal and informal settlements.

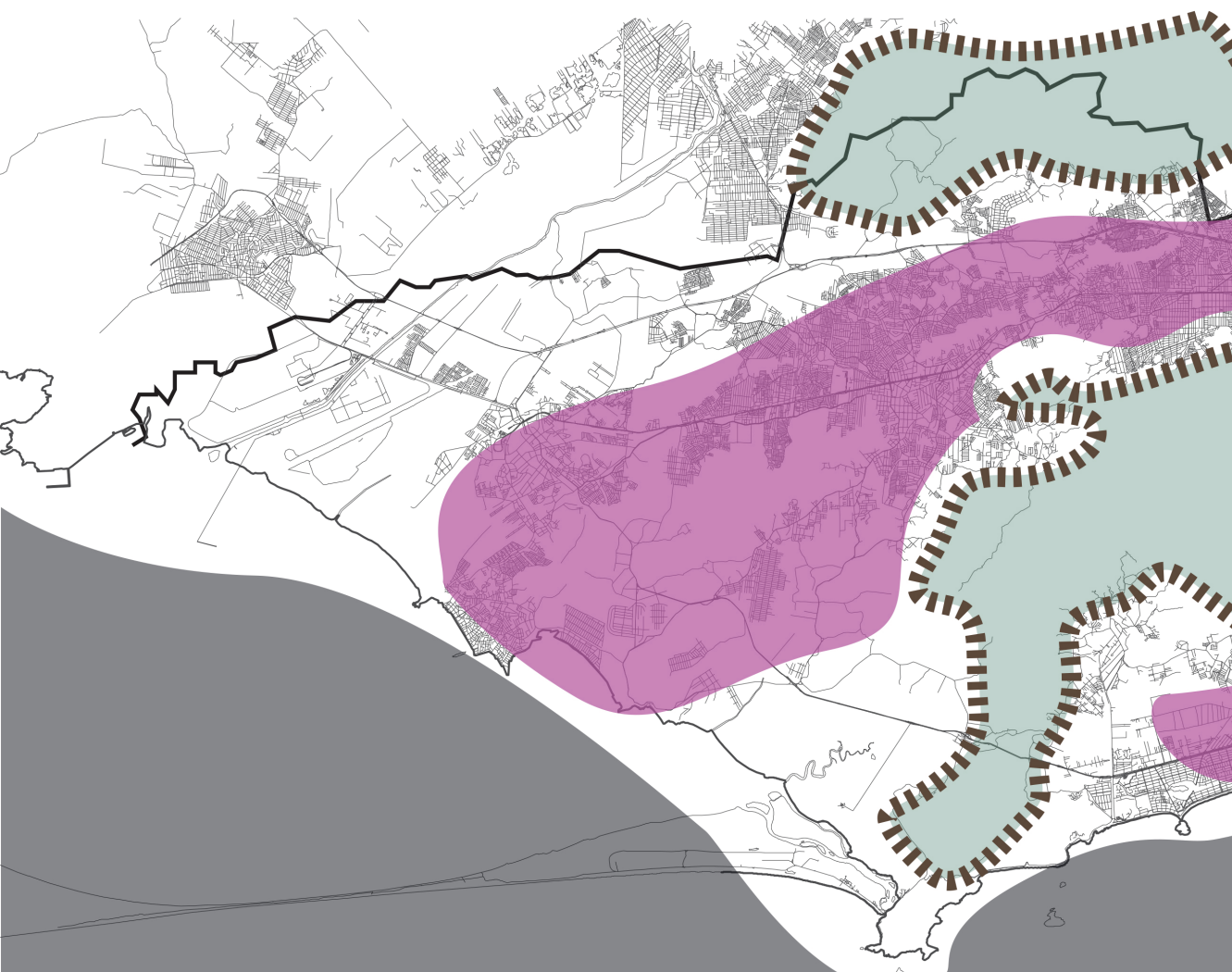


Fig. 18 Interpretation Map of Rio de Janeiro's urban landscape

5. Case Study Area

Location: Northern Zone

Projects:

1. Favela Bairros 1995-2000
2. PAC. 2007-ongoing
3. Green my favela 2012- ongoing



steep vertical heights. The favelas and the formal city exist side by side always separated by concrete and brick walls, extension of open green space that does not belong to any particular group but its existence and significant underlying meanings are understood and respected by both parties involved. In their simplicity, they signify the transformation landscape or crossover space from one way of life to the next where completely different legal frameworks govern the space.

The immense presence of concrete and infrastructure that forms a network much similar to a network of veins feeding these urban populations from one area to the next gives the impression of being on the freeway yet just traveling from one area of the city to the next.

Another interesting interaction is the manner in which the favelas are dispersed in the city irrespective of the contextual real estate socio-economic dynamics. They are part and parcel of the urban fabric of the city and very much integrated in terms of access to the rest of the city. Although access to the favelas is legally open, the high crime rate and the safety risks within the settlements keep away people from the formal city. The interviewed residents in Manghuinos said to enter the favela, one needs permission from the 'lords' however the people living in the favelas freely interact with the formal city in the streets and public spaces of the city.

In trying to create continuity in the urban form between the informal settlements, there are roads that connect the two settlements. The use of motorbike taxis as the preferred form of transportation that can best handle the narrow winding and very steep streets within the favelas is dominant. The location of the official motorbike ranks where they wait for potential clients along the

roads that connect the city and the favela at the beginning of the favelas are symbolic in that they mark the presence or 'gate' to the favela. The favelas have beautiful views of the city as they are located in the steep hills overlooking the city's tall buildings where most of the favela residents are employed.

The cultural vibrancy of Brazil is not underrated and in Rio de Janeiro, the city is a melting pot for a diverse range of cultures, indigenous, African, European, Asian with equally diverse spiritual inclinations ranging from Buddhism, Christianity to practitioners of Voodoo. In the city, the urban landscape still reflects this strong cultural diversity for instance, the historical African quarter of Pedro do Sal (Fig.20). Located in the city's historical centre, it is still a very iconic home to the Samba lovers who in-formerly gather here every Monday and Friday evening to dance Salsa crowding the small space and for a few hours there is no segregation based on race or anything and only one united language of music and dance.

According to different interviewees, the three aspects that are well ingrained in the cultural identity of the citizens of Brazil and brings them all together during which for a short while the issues of racial and class differences are momentarily forgotten; all things linked to Football, the Church and spirituality as a whole and the most elaborate of all this is the Carnival. The Carnival is globally known and recognised as an important part of the culture of the city. According to the local residents of the city of Rio de Janeiro, the idea behind its foundation was as a period for the slaves to reverse roles with their masters in a show that would last a few days filled with loads of jubilation and celebration. For this period of time, the slaves freely interacted with their masters in a theatrical extravagance that was enjoyed by both the people from the favelas and the formal city as well. This was transformed into

what the carnival is today where the performers and exhibitors are still mainly from the Favelas but on these few days of the year, they descend down into the city in a spectacular and colourful extravaganza and elaboration of their creativity and innovation. During this period, all members of the society regardless of race or social status interact in celebrating this in showmanship, spectators,, music, dance and theater.

Another key element to the Brazilian culture is the allegiance to a divine deity and the idea of spirituality that is so diverse ranging from pure Catholicism to Voodoo practices to a Christianity that is enhanced with voodoo rituals. This strong reference to spirituality is a common ground for the diverse ethnic cultures as different collective rites are performed in the public spaces, churches or temples as well as in the open natural landscapes. During the practice of the collective rites, different social and racial classes also interact freely with respect to a higher calling.

Fig. 19 The pedestrian passages in the Rocinha favela in Rio de Janeiro, a public staircase in Santa Teresa and the Copacabana street made pedestrian on Sundays.



When it comes to the ephemeral landscape and use of the arts, music and dance in the public spaces, Rio de Janeiro's public spaces are accustomed to this. The arts in public spaces is revolutionary and these movements are common in the favelas. Initially they were informal and spontaneous community initiatives but now it is the norm. As some of the interviewed residents of the favelas describe the ambiance as relatively quiet during the week when most residents are at work in the formal part of the city. However the party is turned on the weekends when everybody plays loud music and dance defining the essence of the rich cultural life in the favelas.

The public spaces of the city are also very diverse in character depending on the context from the beautiful Flamengo of Roberto Burle Marx to the neighbourhood small parks in the Favelas, open spaces have a strong role in the daily life of Brazilians. The use of park furniture like open public gyms is well spread out in the city and included also in the pacified favelas where the city government has made steps in urban renewal projects with basic amenities like children playgrounds and sports facilities.



Fig. 20 Images of Pedro do Sal square in the city which transforms from day as a small community open space to night when different races and social classes of the society gather to collectively experience live music and Samba.

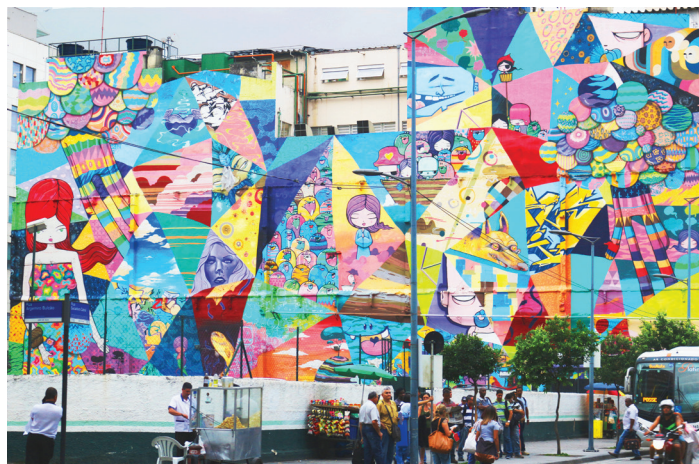




Fig.21 Images of the urban landscape of Rio de Janeiro showing the interaction with nature, informality in settlements dispersed through the city and the public gyms that are in the different open spaces in the city.

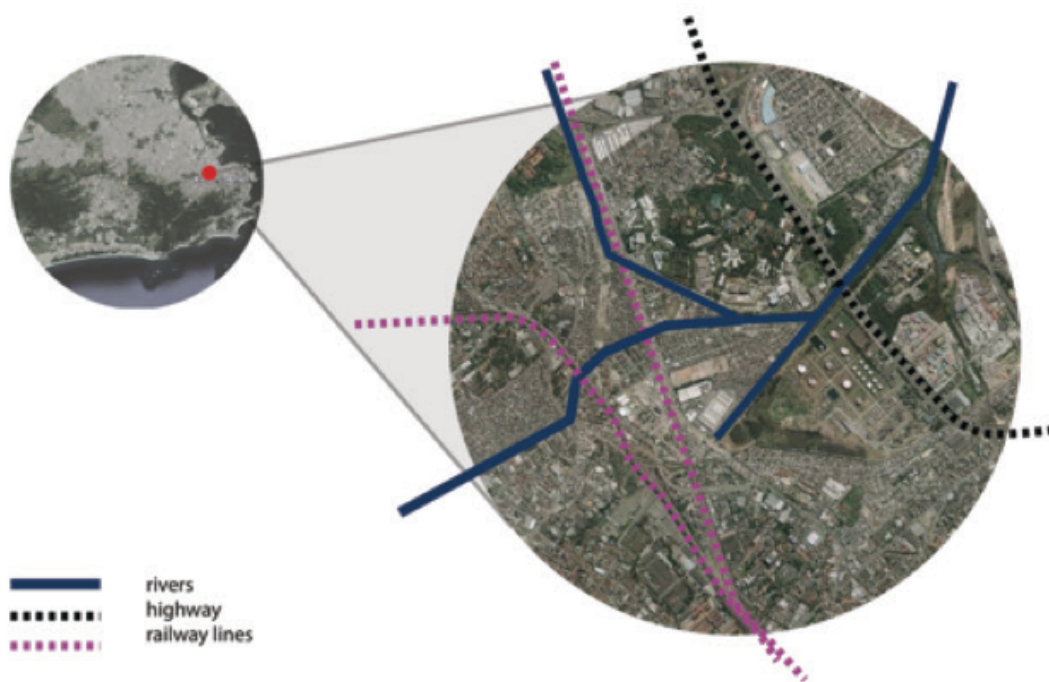


3.1.7 Specific Case Study Area; Manghuinhos

Located in the northern zone of Rio de Janeiro is a cluster of 16 different favelas that form the complex conglomeration known as the Manghuinhos complex with a population of close to 50,000 inhabitants in the area that was formerly an industrial area. The favelas are separated from one another and in some cases this fragmentation is made physical by rivers that cross through the area and large infrastructure elements like the oil refinery, the railway line, tram lines, high voltage pylons and the highway.

The different favelas in this complex have different historical and socio-economic dynamics that are related to the reason behind their formation and the difference in their identities for-example some are a result of demolitions from other areas while others were formed to provide accommodation for industry workers.

Fig. 22 Location of the Manghuinhos complex.



This complex industrial urban area whose left over space is inhabited by the informal settlements is a classic example of spatial segregation of the marginalized populations of the city. The area faces high ecological risks, general low quality of life and a high crime rate owing to the low employment levels and the low income of the residents. A majority of the residents on the area are migrants of first, second and third generation from the rural areas of Brazil who were attracted to the city by the possibility of work in the industrial area.

It is against this backdrop that the city government initiated the renewal project under the state Growth Acceleration Program (PAC) Project of the area contracting Jorge Mario Jàuregui of the architectural firm Metròpolis Projectos Urbanos in Rio de Janeiro

Fig. 23 Project Scope of the PAC project. and architectural rendering below of the 'rambla'.

Source: www.moma.org



to carry out a high level intervention landscape urbanism project. The landscape urbanism project aims at stitching the different neighbourhoods through providing this linear public space where the different members of the different neighbourhoods will interact and engage in various social activities that can create a social bond and ignite a general urban regeneration of the area. The project has the potential to create the much needed socio-economic linkages between the formal and informal city, and between different favelas creating opportunities for cultural exchange and effective community bonding.

The idea of mobility and physically transporting the habitants from one area to the another is one of the key strategies of the project in a bid to increase connectivity and eventual social integration between the different neighbourhoods and the rest of the city increasing accessibility to the services and opportunities for work. The connectivity mainly promotes the use of public transportation and in effect creates a stitching effect on the fragmented elements of the urban fabric.

Another strategic tool that was particularly highlighted in this urban renewal project was the use of public space as a tool in not only urban re-qualification but urban regeneration as well. One of the things found to be inadequate is in the level of accessibility to open spaces in the favelas as most of the available space is used for the provision of housing in an informal way. Given the fact that open space is known to be a crucial part of urban life in Rio de Janeiro given the success of the Copacabana beach designed by Roberto Burle Marx which is more or less the true centre of the city in terms of social and cultural life, it is important to understand the need for this space for interaction. At the beach different people tourists, the rich, the poor, people who live in the favelas and the

formal city all collect to enjoy the social and cultural ambience with no limitations to the accessibility. This and not the commercial centre where the people go to work is the true heart of the city which is the reflection of Brazilian culture in relation to expression in the open areas like the samba, the carnival or just ordinary laying on the beach to watch life take place. This demonstrates the key role of culture and not only economy as the core of urban life in Rio de Janeiro and therefore it's potency in improving the quality of life and sustainable urban development of the urban area.

In this regard the project also aims at providing open spaces in the favelas to provide opportunities for interaction of the different groups both within the favelas and the areas that connect different neighbourhoods. The project therefore proposed different types of open spaces protecting the existing green spaces like the re-qualification of the river areas and providing new ones that are safe and diverse in nature to facilitate social interaction. The most ambitious of these new open spaces is the Rambla (inspired by the Rambla in central Barcelona), that is a linear park occupying the area that was previously known as the Gaza strip owing to the fact that it was an unsafe strip of open space that separated two different favelas and was occupied by drug users and dealers. This new rambla once an area of social conflict was proposed as a new centre for the area where the different groups can meet to engage in positive recreational and cultural exchange and eventually catalyse a sort of social integration and social regeneration.

The functionality of the project aside, the project also uses the idea of aesthetics and beautification of the neighbourhood so as to strengthen the sense of ownership and identity of the occupants in relationship to the project. To understand this there was a need to understand the cultural values and the character of the community

Fig.24. Infrastructure and housing in Manghuinos. The impact of the infrastructure on the public space.





Fig.25 Small Kiosks and informal sales points coming up in the project. The project next to the main train station.



in terms of what they wanted and to them what was the thing that was missing in their community to make it the ideal. Their needs ranged from improved accessibility, sanitation to an improvement in the spatial quality so as they could enjoy it and also felt the belonging to a place that they could be proud to call their home.

However the project falls short in that it did not adequately address the housing needs of the population that was displaced by the developments of the construction and renewal project as it provided for only 1700 out of the evicted 2,200 inhabitants and did not come close to meeting the gap that was required which is 5000 housing units. To add to this the local population is not satisfied by the lack of transparency in the participatory project. Before the initiation of the project, the locals had formed a Forum with representatives of the residents called the Manghuinhos Social Forum to actively contribute their opinions in the project. This participatory and democratic form of social expression was already a part of the Brazilian culture after the fall of the dictatorship government in the 1980s. The forum had representatives from different actors and stakeholders that resided in the area like local associations, social and cultural leaders and representatives from the different demographic groups of the city and held weekly meetings. However the government chose to work with a group of leaders and representatives some of which were formerly part of the earlier set forum effectively fragmenting the participatory process that had included the other social and cultural leaders. This created a risk of the project not being well received by the locals and becoming another icon of government high-handed influence on the informal settlements.

The landscape is indeed the canvas onto which different cultures and humanity paint their imprints in layers over time

and in some cases the result is the urban hybrid landscapes of the cities of the global south today where the regulations of the formal or rather the European systems of city formulation do not directly apply. These resultant urban hybrid landscapes that are an image of the stark differences in circumstances that form the city are not to be seen as negative aspects of the urban form but as an opportunity for the residents and visitors as they are all part of the character of the city. The result of the cultural interaction on the landscape the stark differences that can be seen on the landscape.

In these landscapes of cultural diversity, the element of cultural sustainability becomes an important element in the process of social integration and a cohesive source of city re-qualification in the urban landscape. The way in which a project is welcomed and appreciated by a community is dependent on the way they can respond to the project if it identifies their actual needs or if they can associate with it in their daily activities. Otherwise if it is rejected because the local community does not find an adequate link to their lives and it remains another isolated and abandoned area in the area.

The fact that public spaces within the landscape hold the possibility of creating opportunities for different cultural activities among people from different backgrounds makes them key in urban regeneration and not just re-qualification processes in the urban hybrid landscape.

In Manghuinos, the interventions promised to be adequate contextual and functional base and not only aesthetic civic value but play an active role in the lives of the citizens so as to develop a sense of ownership and community belonging that is vital for the long-term life of the projects. This goes back to the cultural back-

ground of the people, because in some cases the grandiose public spaces provided may not be found to be useful to the people for which they are designed meaning that they end up being seen as spaces for the others or pockets on the landscape that do not form part of their daily lives.

In conclusion, every hybrid landscape is unique with different unique socio-economic and cultural networks and require systems that are specific to this location. Therefore the sustainable approach is to take into consideration the historical procession and the different ways in which the hybridization came into existence because it is these formulation processes that can best inform the choice of adequate tools to use that will most likely have the desired results in the urban regeneration projects and improve the quality of life of the users. This aside from the fact that some generic and policies that work in one place can work in different similar situations with similar circumstances goes on to underline the key role of culture in the sustainable growth of cities.

3.2 Johannesburg

Johannesburg, the largest city of the Gauteng region which is one of the nine regions of South Africa, is one of the key economic hubs of the African continent. The city is one of complexities that was founded on the gold mining industry which was also the main attraction to the city. However with the ever increasing population and a smaller affordable housing market, there is a great gap in available housing and leading to the growth of informal settlements around the city. In Johannesburg, some of the Green open spaces often around big infrastructural intersections is taken up by urban agricultural initiatives as a way of living by the people in transition from a rural lifestyle to the urban lifestyle.

The gold mines are a strong character of this landscape and their strong connection to the informal settlements that are set up

Fig. 26 View of Johannesburg's central business district.



by people seeking employment in the mines that are the majority. This peculiar golden landscape is also characterised by the natural urban forest, abandoned gold mines, informality alongside formality, and urban agriculture all forming part of the landscape of Johannesburg.

To add to this the cultural diversity of the city of Johannesburg is part of the interesting component of its hybrid character. A significant population of citizens have a European background mainly British and Dutch, an Indian population, an Asian population and the native black South Africans alongside a migrant population from the rest of Africa. This cultural diversity is also expressed in the urban landscape and the manner in which open spaces and public spaces are utilised making them a key element for urban renewal and social integration projects currently being carried out by the state to improve the quality of Life for the urban dwellers.

3.2.1 Apartheid History

Before the arrival of the Europeans in the area, it was occupied by the San people (Bushmen) who lived off the land hunting and depending on nature for their wellbeing. However in the 13th Century the Bantu speaking populations from Central Africa continued their migrations southwards occupying some of the land where the San people had settled. These Bantu speaking populations from the central part of Africa included the Sotho and Tswana speakers. The Sotho and Tswana groups were driven away from their land by the Zulu warriors who then conquered most of the territory around present day Johannesburg in the late 18th Century. It is important to note that even before the arrival of the Europeans in this area there was already a group of indigenous iron smelters in the area that were carrying out activities that could be linked to

the rich mineral deposits in the area.

The Dutch population first settled in the south of Africa along the coast in Capetown in 1652 where they made it their base area in the region. The Dutch first arrived in the Gauteng (place of gold in the Xhosa language and Egoli in the Zulu language) area around the beginning of the 19th century and established Dutch colonies in Pretoria and Rustenburg including the area that is now present day Johannesburg. With the discovery of gold in the Juskei River in 1853, came an increase in the number of fortune searchers and settlers in the area drastically increasing the population of the region as more people came to get involved in the gold mining industry.

In 1884 the Witwatersrand gold deposits were discovered marking the beginning of the rush and increased economic and urban growth of Johannesburg. The city was founded and named Johannesburg in 1886 after Johann Friedrich Bernhard Rissik and Christiaan Johannes Joubert, the former was a clerk in the city office

Fig. 27 Map of Johannesburg 1897.
Source: university of Witwatersrand.



and the second was a key leader in the city mines office. By 1887, Johannesburg had a population which had grown close to 3000 inhabitants owing to the discovery of gold and within the next 10 years the city had expanded to a population of over 100,000 inhabitants. Most of the inhabitants were immigrants mainly gold miners that came from as far as Australia, California and Ireland. The local indigenous immigrants mainly men who left their families behind in the rural areas came from the other regions of the country to be employed as unskilled labour in the mines.

At the end of the 19th century was when the Anglo- Boer War took place between the British colonialists and the Dutch white settlers (who were known as the Boars) of South Africa. This war had an impact on the city's population as most of the black Africans who were employed in the mines left to go back to their homelands because the city was no-longer safe for them. As a result of the skilled labour shortage, cheap labour was imported from China during the war to keep the mines running. This continued to take place until the end of the war when the black mine workers returned to the city to reclaim their jobs in the mines. At the end of the war, the British colonialists won the war leaving the territory under their colonial rule.

In 1948 the Apartheid Act was enacted into law by the National Party (a political party formed by the white British and Afrikaner people) governments that were in power in South Africa. This institutionalised segregation act was in effect during the entire time that the National Party Government was in power that was from 1948 to 1994. Apartheid is an Afrikaans (Afrikaans was the language spoken by the Dutch settlers in South Africa who were also known as Afrikaner people) word which directly translates to the act of separation and living apart. It was a system of institu-

tionalised segregation according to racial classification into white, black, coloured and Indian populations. The segregation was also on the basis of housing and involved a massive relocation of people into their designated areas. The Black people were settled in the South West Townships (Soweto) that were south of the mine belt while the white population was settled north of the belt. To move from one area to another that was different from that defined for one's racial group, a pass in the earlier periods and then an identification document was required.

With the rise of the African National Congress with Nelson Mandela as the president of the new free republic of South Africa and the inevitable collapse of the Apartheid government in 1994 came the increase in population. The population growth in the urban region of Johannesburg was owed to the fact that the immigration limits in the city were reduced and more people moved from the rural areas to the city in search of jobs and better opportunities the city promised. Most of this population had to settle in the informal settlements of the 1994 End of Apartheid notable growth in population of the city.

Johannesburg has since become one of the most urbanised and principal cities of the African continent in terms of economic growth, social and cultural diversity. The city projects itself as the global connection to Africa, attracting most of the conglomerate headquarters for multinational companies that have established themselves or that seek to break into the African business market. This prestigious and leadership role as one of the main economic hubs of the continent has been part of the reason for which the city has hosted impressive global events like the United Nations conference on Environment and Development (The Earth Summit) in 1992 and the 2010 World Cup of Football finals.

3.2.2 Urban Growth Time-line

The Gold Rush

Right from the foundation of the city, the existence of gold was the main attraction that drew different people from various backgrounds to this relatively arid area of South Africa. Most of the settlers were involved in the mining industry in one way or another either directly or indirectly by providing financial and banking services to the miners. The majority of the settlement for the white population was located close to the mines on the northern part which was safe from the dust winds from the mines and the black miners lived in what were referred to as hostels. This was a convenient form of housing since most of them came to the city to work leaving their families behind in the rural areas where they tended the agricultural farms. The physical traces of the impact of the institutionalised racial segregation in the settlement and housing structures that are part of the urban landscape of the city are an extension from this period.

The Anglo- Boer war at the end of the 19th century had a direct impact on the demography of the city as the black population fled the city and a new group of Chinese workers were imported to fill the void contributing to the Asian population of the city. By the end of the war in 1904, the population was 155,642 with 83,363 being white and the Chinese forming the Asian population which would be classified as Coloureds during apartheid. A lot of construction took place in the 1930s with the city growing vertically especially in Hillbrow and informal settlements started to form south of the gold mine belt to provide accommodation for the lower income mine workers.

1948 Black laws amendment Act,

Apartheid was a key factor in the urban morphology of Johannesburg with the footprints of this era having significant influence on the way the settlement patterns of the city are taking form in the contemporary times. The law led to one of the greatest urban mass re-housing projects as different races were relocated to their respective areas of settlement with strict regulation on the accessibility and interaction between the different races. The institutionalised segregation went beyond racial lines to tribal scale where within the black settlement areas, different tribal groups were settled differently to keep them all separated.

Johannesburg during apartheid was a two tier city: in the first tier lived whites in residential neighbourhoods heavily regulated but still driven by markets; the second tier consisted in a number of 'black' and 'coloured' townships built within strict borders, that could not normally expand and where the large majority of people were living in rental housing owned by the state.

Whites were living in low-density residential areas, which expanded in far away suburbs well served by a network of highways. Whites consumed a large amount of land per households and were located around the CBD, while blacks consumed much less land in townships located in the periphery in areas specifically allocated to them. In terms of employment, Johannesburg is also a dominantly mono-centric city. Blacks commuted to the CBD by trains, buses and collective taxis. Whites used private cars.
Bertaud ²

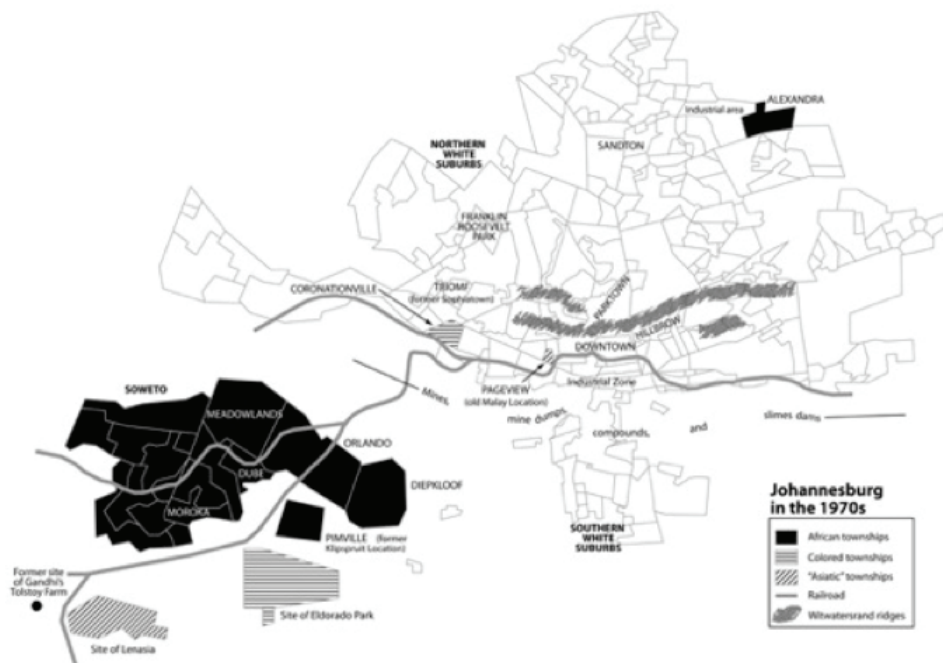
The urban landscape of Johannesburg then had the gold belt as the dividing geomorphological element of the settlements with

² BERTAUD, A. 2001. The costs of Utopia: Brasilia, Johannesburg, and Moscow.
<http://alainbertaud.com>

the whites having their settlements in the north and the blacks located in the south of the belt towards the west where the winds from the dust of the mines was not so strong. Today the formerly white northern suburbs are undergoing a transformation process in terms of integration in some areas where blacks and other races are buying property. In addition to this, the phenomenon of gated communities in the city is becoming increasingly common in the northern part of Johannesburg with exclusive areas like the Melrose Arch housing precinct. A significant portion of the rich mostly white population in the city live in these exclusive gated housing estates. These gated communities are built with most services within the gates reducing the need for residents to go out and very limited access to people who do not live within the area gaining access.

Fig. 28. 1970s Johannesburg settlement plan based on race.
Source: www.mascon-text.com

The institution of apartheid was also applied in the economic terms that put limitations on the access to land ownership and



financial prosperity that was available to the black populations. This meant that the black populations found it harder to gain economic prosperity within the system that was strategically structured to favour the white minority. Accessibility to education in the tertiary institutions and universities was also limited to the privileged minority white population meaning a greater portion of the highly skilled population were white people.

In the 1970s with the decline of the mining sector, speculation and the relocation of the mines and riots during the struggle for independence as well as the increased crime rate in the city of Johannesburg, there was a mass migration of White owned businesses from the Central business District of Johannesburg to Sandton in the northern part of the city. This led to an abandonment and great decay in the urban spaces, streets and core of the city. The shift of the financial, banking institutions as well as mining companies from the centre to the north resulted in a shift of most businesses and focused the core of business and economic growth of the city in the north outside the central business district.

Post-Apartheid Economy and the Informal Settlements

In the 1970s with the mines being moved from the city to the rural areas of the Witwatersrand, the former mines were left unoccupied leading to their occupation by the urban poor within some of the former mining areas away from the city centre. This contributed to a significant increase in the urban population during the 1980s as well as the increase in informality within the city limits. After the fall of the apartheid regime in 1994, there was an immigration boom into Johannesburg from the rural areas, the rest of Africa and beyond the continent in search of work. This was owed to the fact that the city then had a high economic growth rate with a new thriving services industry and many multinational companies from

outside Africa setting up their headquarters there. Most of these new immigrants settled into affordable housing in the informal settlements in the high disaster risk areas along the gold mining belt of the city and the abandoned central business district around the area of Hillbrow. The legal framework to curb the expansion of the informal settlements involved policies that prevented the accessibility to services like electricity and water connections to the areas where slums were setting foothold making the quality of life in these areas really low.

Fig. 29 A street in the Alexandra township next to Sandton in the Northern part of Johannesburg.



3.2.3 Johannesburg Rainbow Population

Metropolitan Johannesburg has a population of 3.2 million people with 73% of the population being Black Africans, 16% white, 6 % Coloureds and 4% Asian. (City of Johannesburg). The statistics puts Johannesburg as a primarily youthful city with the greater part of its population between the ages of 30-39 years of age. According to the last 2012 census projections the population of the city in 2015 is expected to be more or less 4.1 million inhabitants and the number of households is set to be around 1.5 million with average household number being 3 persons. The population densities vary according to the location and income levels with the informal settlements having higher densities. However the greater region of the city has a population of close to 9.5 million people.

The city of Johannesburg is characterized by the significant extremes in the differences and diversities like income inequality with extreme wealth and poverty in the city. There is also the existing difference in the character of the city settlement patterns with the Northern zones having relatively lower densities than the southern zone in the settlement patterns.

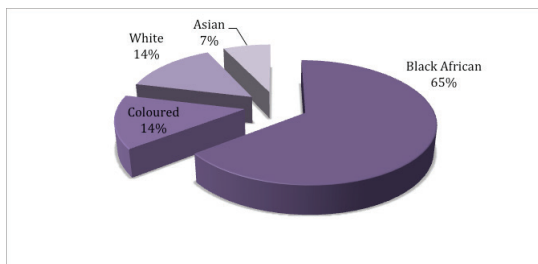
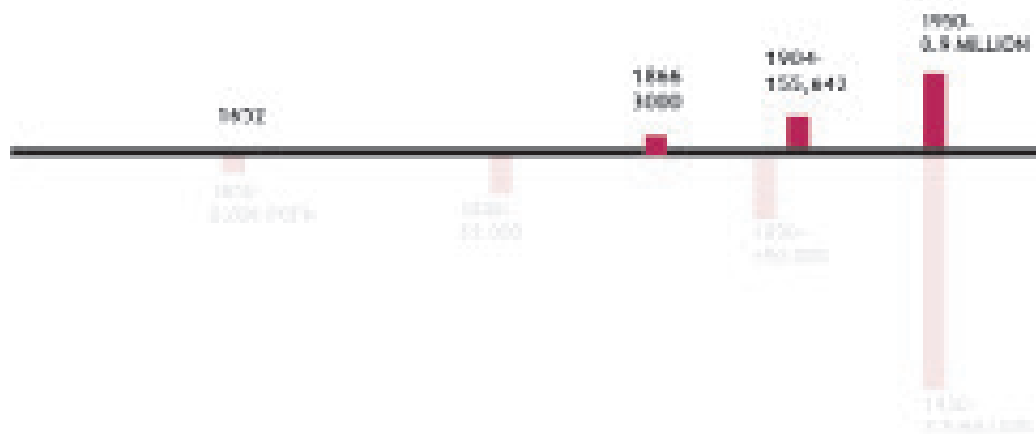


Fig. 30
Johannesburg racial distribution.
Source: 2012 census

JOHANNESBURG



RACIAL DISTRIBUTION (2014)

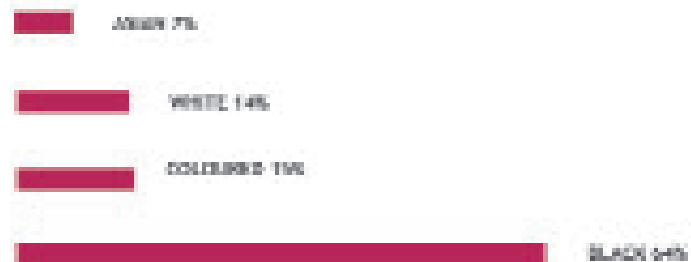
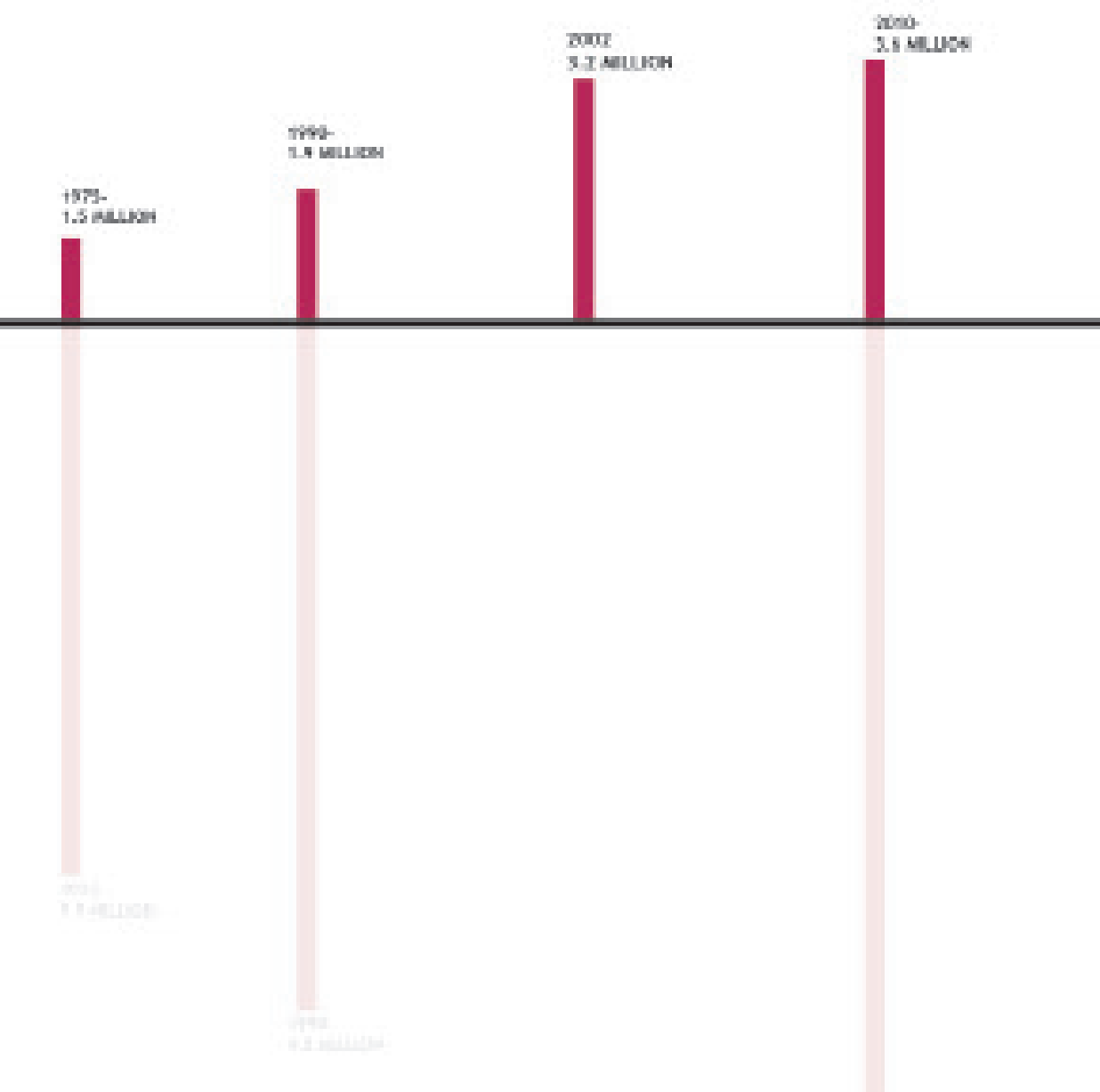


Table 5. Population Growth of Johannesburg



This contrast is very evident in the urban landscape of formality and the informality of the two parts (Northern and Southern) of the city in both economic and settlement areas.

With increasing economic growth in the city, the unemployment rate in the city is relatively high at 25% of the population being unemployed as of the 2011 national census (Statistics of South Africa). Most of the unemployment is claimed to be as a result of immigration of unskilled labour into the city in search of employment.

3.2.4 The Landscape of Gold

Covering an area of 1,640 square kilometres, Johannesburg is located on the High veld (the north eastern plateau of South Africa) which is the plateau (1500-1800m in height) that runs across the entire southern part of the African continent. It is a landlocked city within Gauteng which is the smallest but most economically prosperous of the regions. The climate of the city is a sub-tropical highland climate with sunny days and cool nights in the summer months and dry sunny days with cold nights in the winter.

The topography of the city is characterized by the Witwatersrand (which literally translates from Afrikaans to mean the Ridge of white waters) a ridged system that is part of the plateau which stretches from east to west close to 56 Km across along which north flowing rivers forming white water falls. The north of the ridge is drained by the Jukskei river while the south by the Klip River. The eastern part of the city is relatively flat compared to the very gentle undulating hills in the north and the western parts of the city. The Witwatersrand is very rich in minerals as a result of different geological processes making it one of the greatest gold mining regions of the world and producing 45000 tons (more than

35% of the global mined gold) of gold in around 100 years (Robb, Meyer 1995).

The gold in the area was mainly extracted using the deep-shaft mining technique and for this reason there exists an extensive network of underground mining tunnels while the mine dust and residue earth from the excavations was deposited on the earth's surface. The effect of this network of underground tunnels not only makes the land a high disaster risk as the geological structure was weakened, but the natural drainage is also disrupted by the craters and huge earth dumps that are as high as 30 meters in height. These gold dumps (Fig.31) have become an iconic element of the city's urban landscape expressing its interaction with nature, gold and the economic intentions of the miners.

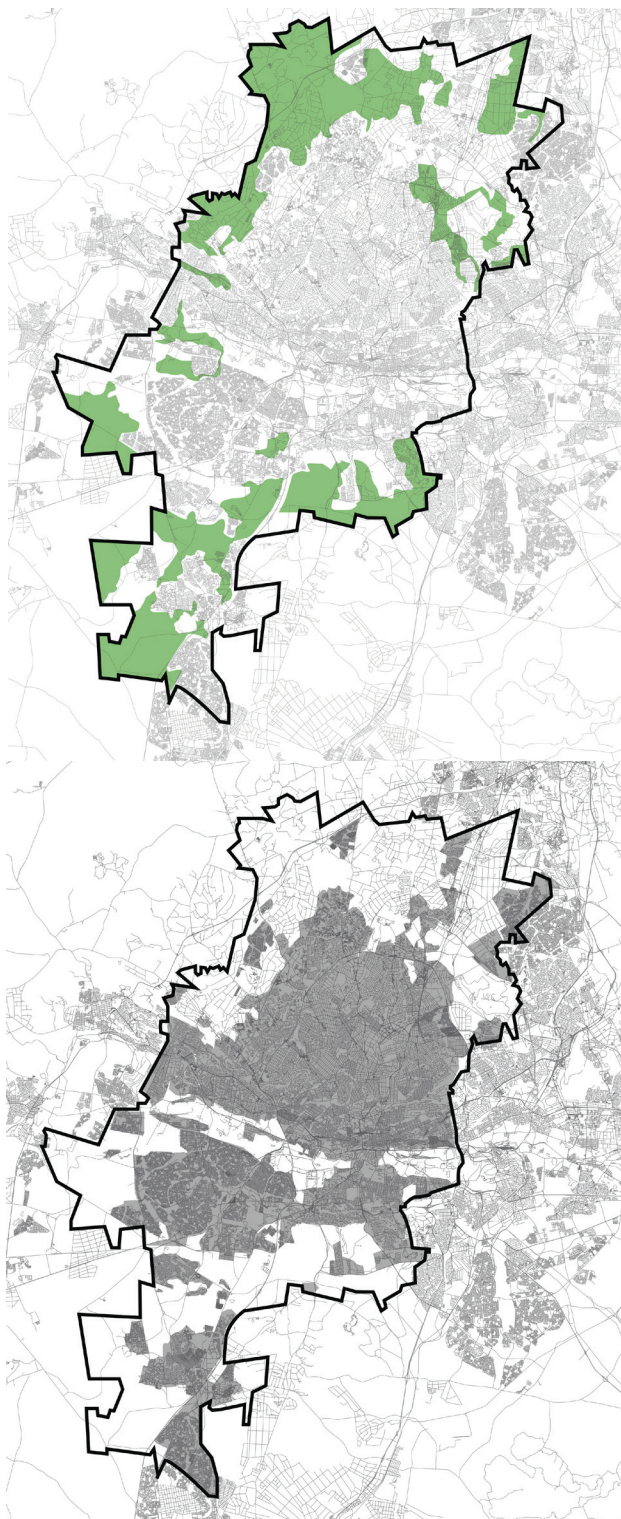
Fig. 31 The mine dumps of Johannesburg

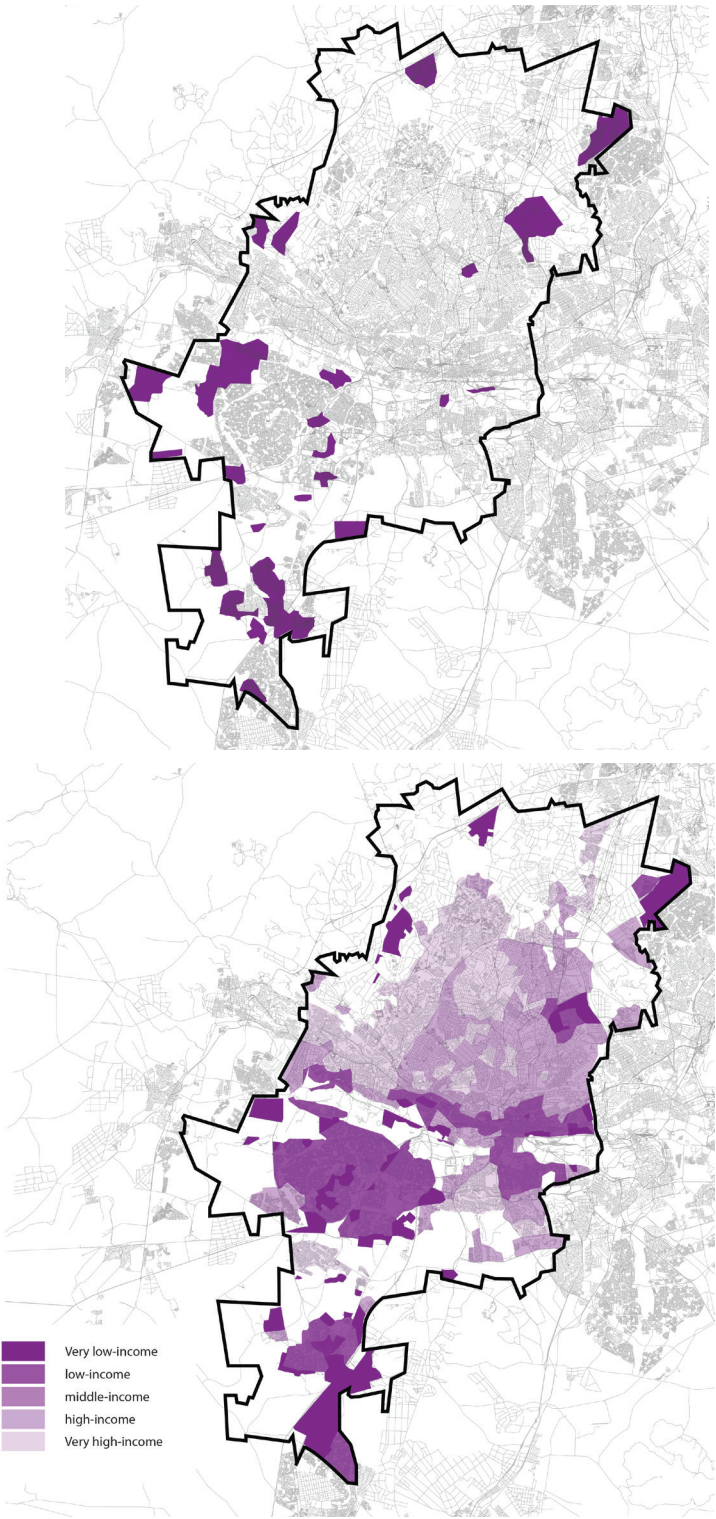


Fig. 32 Map of Rio de Janeiro's urban hybrid landscape stratification;

- Natural green
- Urban Built-up area
- Informal Settlements
- Low income/High

income inequality on the landscape.





However in recent years with new technologies in using the remnants from the dumps to add value to the extracted gold, more of them are being cleared for re-mining and re-dumped in 'super dumps' outside the city centre. This process is leaving urban voids that are highly valuable land parcels owing to the central strategic location within the city some of which whose ownership is contested. There is a functional limitation to the alternative uses of this land given the weak geological structure of the land that cannot support heavy construction of permanent buildings and infrastructure. Not only is the structural integrity of the land in question but the fact that the land is toxic as a result of the chemical processes associated to the mining. Although proven links to health risks have not been proven owing to different factors, the land is still considered as not well suited for human settlement making it ideal for other possible functions like urban renewal projects and other light-scale industry potential.

In effect the geomorphological elements of Johannesburg, the Witwatersrand, the gold mining has had a direct impact in defining the urban landscape of the city. It is through this industry that the landscape has transformed into a landscape of gold transforming the hydrological patterns, the physical topography, the natural ecology and even had an impact on the socio-economic segregative settlement patterns of the people. In principle the majority of the rich and white neighbourhoods of the city are north of the gold mining belt while the black Soweto township and most of the lower income people are settled in the south of the belt. The character of informality in settlement is also more recurrent in the southern part as most of the land in the northern part is prime with high purchase value and well planned and legislated.

Being characteristic of the Highveld, the vegetation of the area was composed of naturally growing grassland as is the case with most of the Savannah with occasional bushes and shrubs. In this natural landscape trees were not as common owing to the severe heat. However at the beginning of the 20th century, the city started encouraging tree planting movements that included importing exotic species like Eucalyptus and Jacaranda to create shade and also to mitigate the amount of dust reaching the residential areas from the mines. It is for this reason that the city of Johannesburg especially the northern part is relatively green owing to these huge canopies. However the high water absorption capacity of some of the exotic species in particular Eucalyptus is not consistent with the natural systems of the area that creates an imbalance in the ecological systems. This tree-planting move resulted in the city being awarded the tittle of the largest green 'urban forest' of the northern part of the city that is best observed at an aerial view.

Fig.33 Mine dumps are an iconic element of the city's landscape.



3.2.5 Urban Landscape Expansion Process

	1991		2001		2009	
	Ha	%	Ha	%	Ha	%
Gauteng (Built-up)	228792	12.6	289781	16.0	333458	18.4
Johannesburg (built-up)	68534	41.7	82515	50.2	92746	56.4

Fig. 34 Percentage of the urban area that is built-up in Johannesburg and Gauteng region. Source: Gotz, Wray and Mubiwa

The city underwent major changes owing to different factors with perhaps the most important ones being the gold mining era and the period during the 1970s owing to the industrial growth. The most significant leap in terms of city expansion in the latest decades was the period leading to the collapse of the apartheid era when the systems that were set to limit integration were broken and the economic boom in the city attracted extensive expansion and construction.

The table clearly shows the extent of how the city has expanded in the past two decades after independence in 1994 with a considerable difference between the extent of built-up area before in 1991 being 41.7% in Johannesburg and 12.6% in the Gauteng region to 56.4 in Johannesburg and 18.4% in the Gauteng region in 2009. This shows that most of the urban expansion took place within the boundaries of the city of Johannesburg with most of the urban growth taking place in the decade after the apartheid era. However in the later decade, the rate of urban growth has been slowing down. This fact is also a reflection on the general population growth of the city as previously mentioned with the urban population growth slowing down in the recent years and being below the statistically projected rates in the preceding decade.

The satellite images of the city overtime show the extension of the city and most of this expansion is in the northern area of the city of Johannesburg. This is mainly in the form of the large plots with expansive gardens that are set up by the wealthy populations. The city has a legacy of identical urban malls with no particular strong diversity as to what they offer around which new developments takes place. These create isolated city pockets that are connected by extensive infrastructural networks of highways and trains. The urban form has therefore transformed over the century from a mono-centric city centred in the Johannesburg Central Business District to a polycentric city that is connected by a network of infrastructure.

Gotz et al (2014) attributed the expansion of the urban form on three main attributes which are the provision of public housing, the increase in the idea and typology of gated housing as a popular lifestyle and to a smaller extent the significant increase in urban informal settlements.

3.2.6 Post- Apartheid Hybrid Landscape

From its historical status Johannesburg being a mining town had always had the character of a transitional city in the sense that it was a stepping stone to the next higher level or final location but not necessarily a final destination or city to call home. This character is still the case since many people move to Johannesburg to earn a quick income and make some money to finance the next investment in their lives which is usually not ideally desired to be in Johannesburg. Johannesburg is extracted for its value without taking into account what happens in the period after the extraction because it is just a stepping stone after all before the next mining spot is found and then re-mined once again for its resources. This has had an impact on the natural landscape of the city as is evidenced by the

physical scars on the landscape.

In terms of the urban Morphology of the city, it is patterned and has evolved based on the principles of mining in the sense that there were the mines, the primary resource and reason for the city's existence, the central business district complete with high-rise structures to house the mining companies and other financial systems that supported the mining industry. Around this depending on the racial background there were the residential areas for the people who worked in the city, still in a way dictated by the geomorphological element of the mines. This integration of the huge mines, the ever-present mine dumps, residential areas both extensive in typology in the northern suburbs and the very dense townships as well as informal settlements form the very complex urban hybrid landscape. The city urban form transforms from a very western grid in the central business district that spreads to different more organic patterns and forms in the suburbs.

At the smaller scale, there are a number of small gardens in the areas especially with low income populations which have been incorporated in some park development projects by the city parks of the city for example in Leratong Park in a poor neighbourhood in Soweto. The character of the urban landscape of the city of Johannesburg is generally one of an expansive flat territory that is sprawled across the entire plain inter-connected by infrastructure in the form of motor ways, railways and the newly built underground train connecting the northern suburbs to the city centre. The city of Johannesburg has recently invested in key Infrastructure for instance the Bus Rapid Transport Network (BRT) that goes all the way to Soweto in the south creating another fast route to supplement the trains and the minibuses that provide access for people from the black townships to the rest of the city. The city also

has an underground train, Gautrain that does not connect to Soweto for the moment but creates a fast connection for transitors to the downtown with Park station connecting the more affluent areas of Rosebank and Sandton in the northern suburbs to the Central Business District.

Johannesburg is a charismatic city as it is able to attract a significant amount of diversity and this character is reflected in the city's cultural diversity. This metropolitan and busy aspect of the city attracted a diversity of 'transitors' who inevitably made the city their home. This hybrid population in the sense of ethnic and racial diversity created a city that reflects their background although it is based on a western city planning grid structure. The immigrants mainly from the rest of Africa prefer to live in the district of Hilbrow (located in the Central Business District) closer to the opportunities provided by the fast growing informal sector in this area. This as well as the fact that due to the recent Xenophobic attacks in the Black South African Townships, the foreigners tend to live together forming an immigrant territory within the urban landscape.

The Soweto Theater Society which is based in the centre of Soweto hosts performances in the Soweto Theater that has become a cultural attraction that brings in residents from a wide range of backgrounds including the high-class wealthy from the Northern suburbs. The newly built theater in the centre of Soweto is a major gathering public space in the city and along with other main attractions like Nelson Mandela and the Desmond Tutu residence is a major pull for the northern residents into Soweto and the areas where there is a sort of open interaction space.

Within the public parks, the city's City Parks Initiative has created different city parks and revitalised previously abandoned

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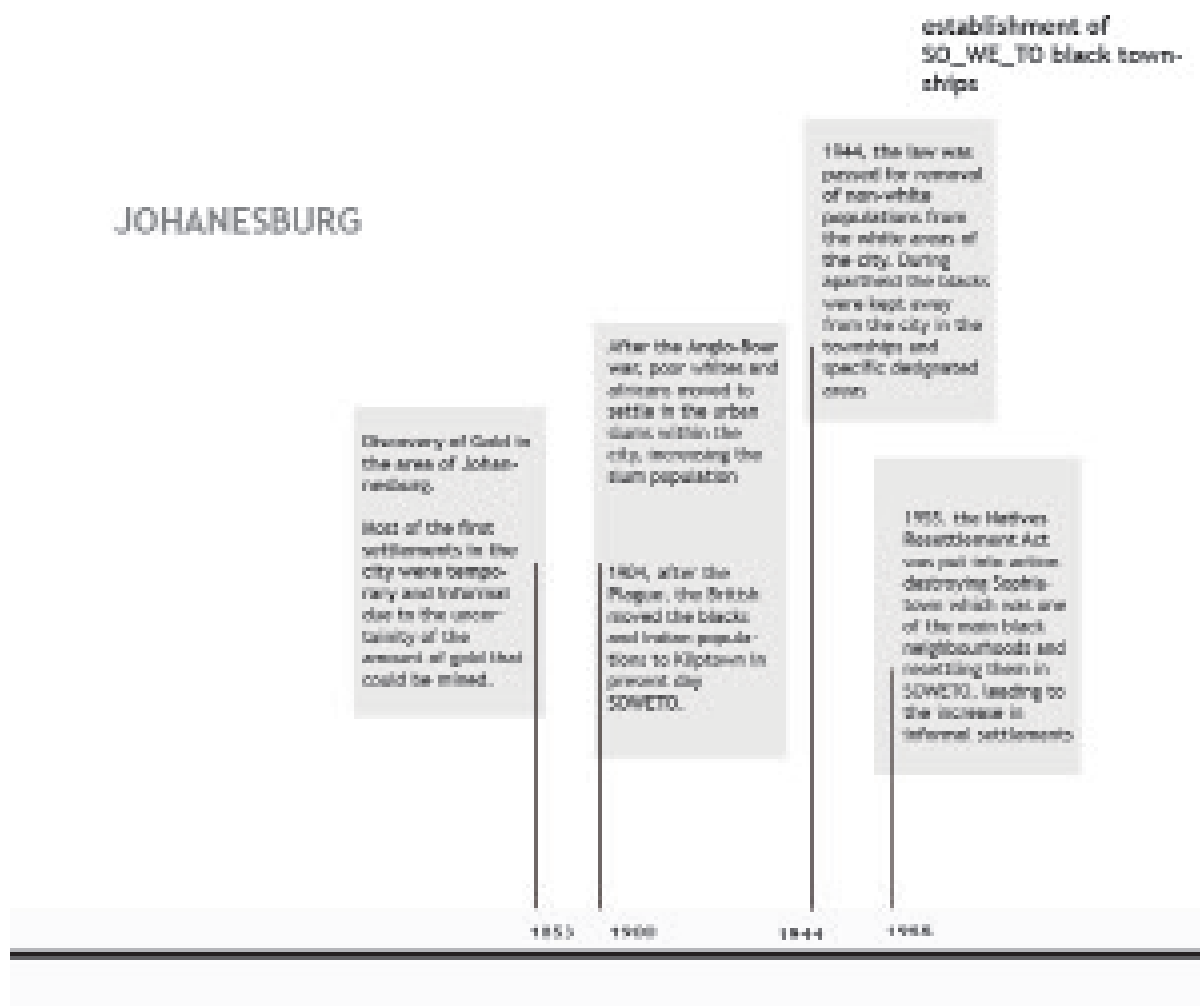
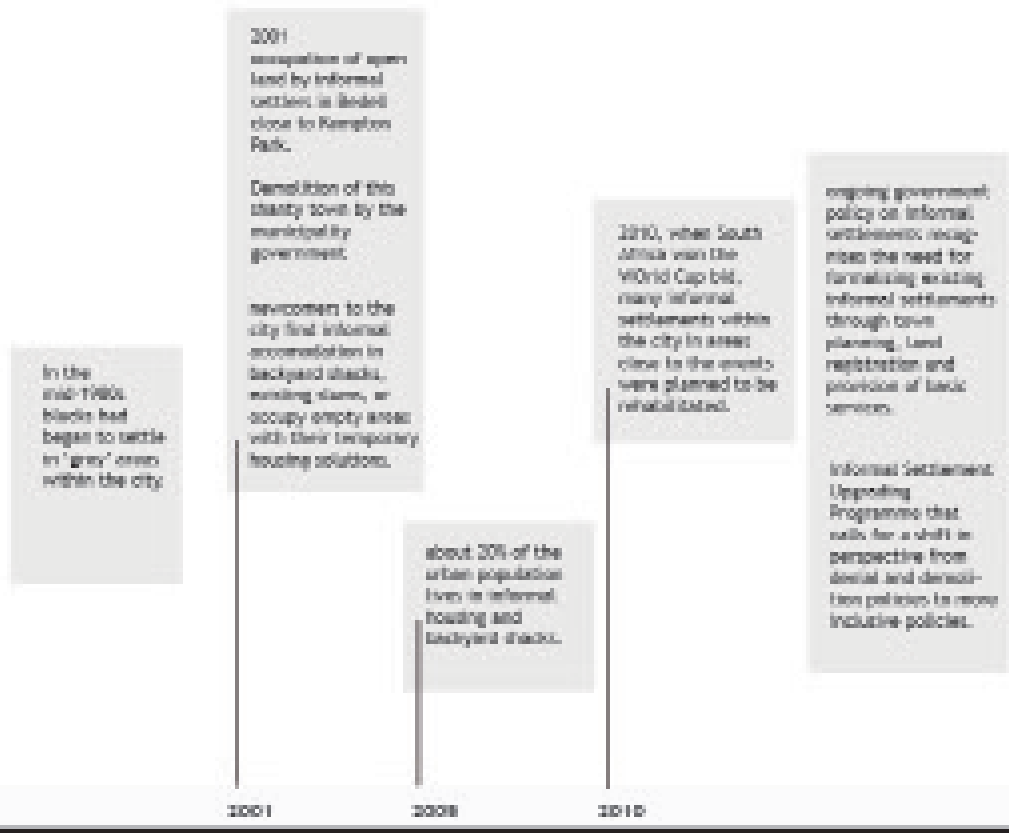


Table 6. Informal Settlements Timeline of Johannesburg

boomtowns, deep-shaft mines, extensive underground mines

Backyard shacks as a solution to urban housing



One of the several informal settlements that are located along the main highway that connects the township of Soweto to the Central Business District of Johannesburg.

Public toilets and new state funded affordable housing along one of the main streets in the settlement of Alexandra close to the affluent neighbourhood of Sandton.

Landing Park located in the settlement of Lenasia close to floodport in the Western part of Johannesburg. These parks are part of the city's landscape architecture effort to provide open spaces for the residents from deprived areas of the city.

Fig. 35 Images of Public Spaces in Soweto, the first being an open playground for the neighbouring settlement. The bottom two are of the Walter Sisulu square designed with facilities for a market however the market continues to take place informally along the street outside the square.





Fig. 36 Images of Public Spaces in Soweto, the first being one of the parks designed based on the module that include play facilities, soccer and public gathering areas. The last two are of the open spaces and the square that are around the Soweto Theatre which attracts residents from different parts of Johannesburg for the rich cultural exchange.



Fig. 37 A children's play area within one of the parks designed for the informal areas in Leratong, Soweto.



Fig.38. A spot in a neighbourhood park next to the lake in Johannesburg.



Fig. 39. A public square in Rosebank.



open spaces in different areas of the city by using regeneration tools that are particularly adequate to the immediate surrounding context. For example the strategic use of public outdoor gym equipment in the public parks attracts a significant number of users especially in Soweto. Another aspect that is used by the city to this effect is equipping these urban parks with facilities that are used for different activities for-example providing fixed furniture for outdoor picnics, sports equipment like soccer fields and children's play furniture instead of open green areas which would not have been used by the residents. These parks are often occupied by different groups in terms of age and ethnic diversity of the neighbouring areas through out the week.

New high income residential areas also have public spaces with a different aim that is an interaction space for-example in Rosebank area. This area has spaces that are linked to a western concept of urban space and street-life albeit the fact that the streets in this area with an interconnected network of relatively expensive urban malls have been privatised. Legally and on paper the spaces remain open to all members of the public, however access to these areas is mainly for the urban rich and middle income population. The areas in the guise of security hire private guards at the entrances to maintain the perception of safety as 'criminals' and people who look like pick pockets are denied access. This is done within legal framework where the private owners have the right to admission of the members of the public often based on the way they appear in terms of social class. The effect of this is that public space is privatised and limited to a specific select few with the desired class and income level.

A similar concept of urban public space is also taking place in the degraded central business district in the Maboneng precinct

natural savanna grasslands on stretches of plains, hunter gatherers and minimal subsistence agriculture with iron-age culture

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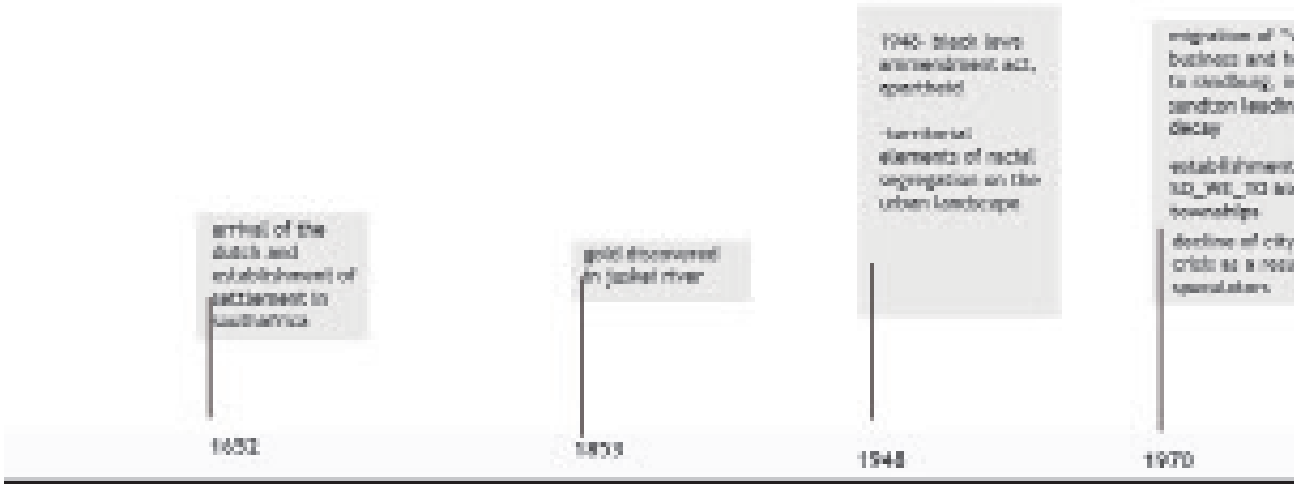


Table 7. Hybrid Landscape Timeline of Johannesburg



Table 7. Hybrid Landscape Timeline of Johannesburg

boomtowns, deep-shaft
mines, extensive under-
ground mines

weakened land, disrupt-
ed natural drainage
patterns, altered eco-
logical patterns

landscape scale territo-
rial planning projects
that cut across the urba
landscape. "Corridors of
Freedom"
- City Parks
- Greening Soweto



The hybrid landscape of the view of Sandton City, affluent financial core of the city of Johannesburg as a backdrop to the deprived neighbourhood of Alexandra with its high density of the urban poor living in informal settlements and backyard shacks.

The iconic urban landscape of the city of Johannesburg is characterised by the ever-present golden mine dumps that are seen in most parts of the city, in this case from the Tlokweng settlement area.

Inner city of the central business district of Johannesburg are cluttered with informal street trade.

which was a formerly abandoned industrial area. The Maboneng precinct has been transformed from an industrial character into an artistic heaven for the city youth from the middle-class to high-class populations. In this small section within a few blocks, the streets are turned into strictly pedestrian routes transforming into a busy street food market on Sundays. However it is still an island of sorts where the rich and middle class members of society from different racial backgrounds feel safe and cool enough to hang out in the city. However the area is still surrounded by areas that are perceived to be unsafe due to the high crime rate in the city centre.

This amalgamate of nature, infrastructure, built formality and informality interlaced with a very complex culturally, economically and socially diverse population all trying to find an individual and collective sense of identity reflects the hybrid character of the city of Johannesburg's urban landscape.

3.2.7 The Landscape of the Gold Mining Belt

Drive past the dumps with a foreigner and you will hear them exclaimed about, marveled at. Drive past them with someone from Johannesburg and not a word is spoken. How can they be both everywhere and nowhere in the minds of many Jo'burgers?

Mara Kardas- Nelson. ³

The city of Johannesburg urban landscape is characterised by the huge expanse of land between the north and the south running across the city that is the location of most of the mining activity within the city. This area is a natural barrier between the northern white areas and the black townships in the south. It is also the area where most of the Mining dumps are located as seen in the fig. 40.

³ LARKIN, J. 2014. *After the Mines*. Fourthwall Publishers. Johannesburg.

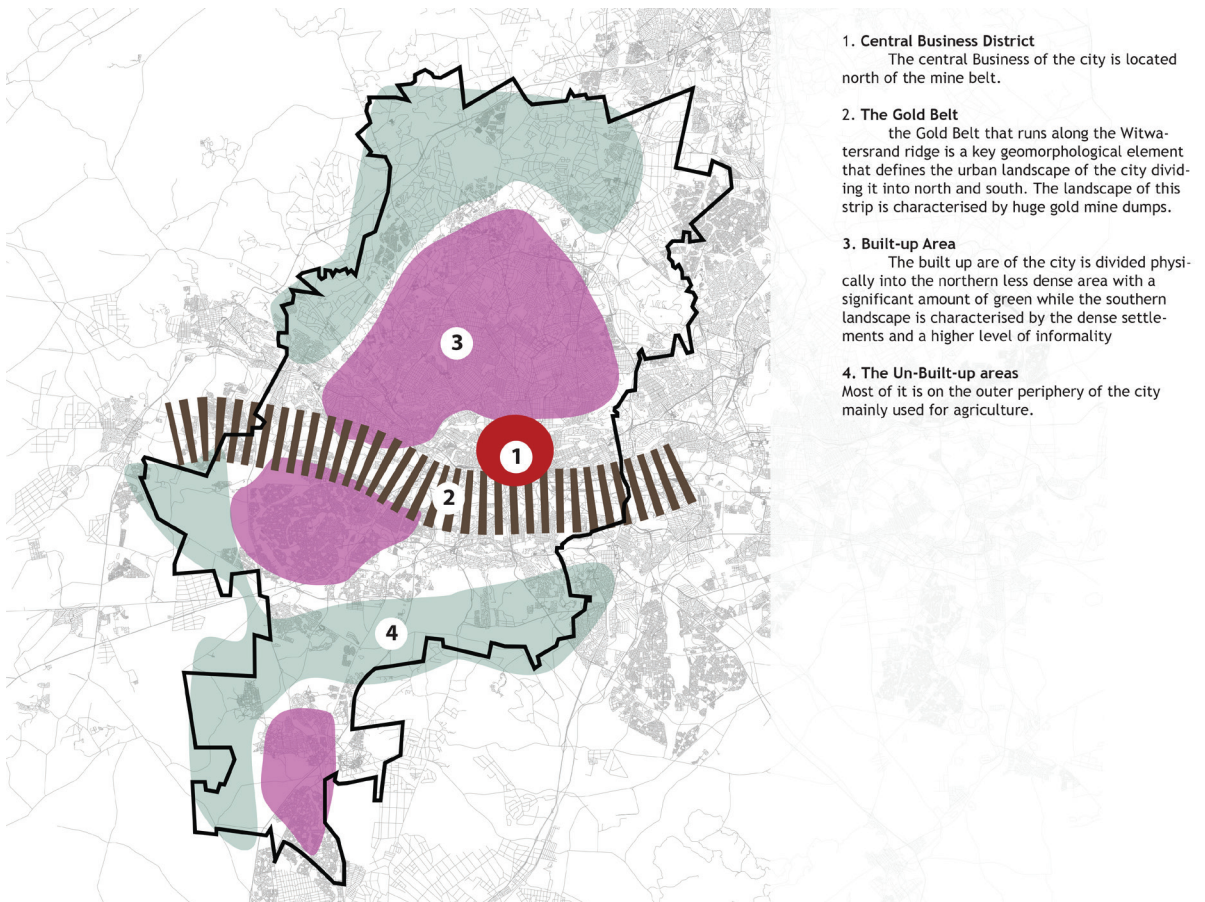


Fig. 40. Interpretative map of the urban landscape of Johannesburg

This strategic piece of land is in the pipeline for being rehabilitated and used in the provision of Open Spaces and urban green networks that connect the south and north at an urban scale and not just using infrastructural conduits but places where people can bike, walk and hold different social and cultural activities within the same landscape. This is in the context of the strategic development framework for the city of Johannesburg under the “Corridors of Freedom Project”. In this project, the city plans to use the idea of a network of green corridors connecting the different nodal points of the city. Along these corridors, landscape architecture and urbanism projects are used in the proposal with different street furniture and public spaces along the routes. Within this strategic project, one of the key corridors is the Mining Belt as a corridor connecting the east to the west but within which different projects that attract diverse populations are to be located to connect the northern and southern populations.

The mining belt of the Witwatersrand was also used deliberately in places as an apartheid ‘buffer-zone’ separating racially defined settlements. Overtime it became a physical marker of the spatial and wealth divides wrought by apartheid, and still today poses limitations on post apartheid spatial integration Gotz, Wray and Mubiwa. ⁴

The buffer zones were planned as tools in the physical spatial separation process using; natural open lands, the mining belt, infrastructure elements and industrial elements. During apartheid planning, there were buffer zones that were planned around the settlements of the different racial groups to control interactions between different groups. In the case of the northern part of Soweto,

4 HARRISON, P., GOTZ, G., TODES, A., & WRAY, C., 2014. Changing Space, Changing City; Johannesburg after Apartheid. Wits University Press. Johannesburg.

it conveniently became the existing mining belt that separated it from the Northern white settlements. The belt was also key in the city in providing a source of employment for the majority of the blacks in the south as casual labourers in the gold mines and the factories. In this stretch of land was the area with close to 50% of the city's gold deposits.

Over the years the area has been riddled with deep shaft mining and extensive tunnels that has weakened the structural composition of the land and led to ecological changes in the natural ecosystem. However with the transfer of most of the mining activities away from the urban areas in the 1970's, the area was left abandoned leading to it's occupation in some places by informal settlements. This is particularly the case in the areas that the land owners can not be traced after the collapse of the mining industry. This left no particular custodians of the land resulting in it being abandoned and therefore occupied by informal settlements.

However in the case of Johannesburg central in particular most of the mines in that area were owned by the Crown Mines Industries which is still existing and a strong stakeholder in the mining industry of the city. The growth of these informal settlements heightened with the end of apartheid and influx of more black immigrants from the other parts of South Africa and also the rest of Africa in search of new opportunities in the fast growing economic city. The increase in informality in the area is naturally frowned upon by the local municipality which in response denies them access to the basic services like piped water and sanitary facilities to add to the fact that the land they occupy is toxic as a result of the previous mining activities and a health risk to them. Another high risk they face is the fact that the land is not stable enough to support construction which is also a result of the mining in the

area. Many of the inhabitants in the south and from the informal settlements cross the expanse of land on a daily basis to commute to work in the northern part of the city using the infrastructure that has been set up that includes the Bus Rapid Transit systems.

A different face to the mine dumps that is at a human scale is the role it has taken in the cultural lives of the local population outside the strong economic mining role. Within this man-made landscape some members of the society who use it as a meditation space, a spiritual area where they can practice different rituals in the peaceful and serene areas to the gods. This is important because there are few areas in the city that are as peaceful and seemingly wild and natural providing a peaceful and spiritual ambience for these private and sometimes group rituals. Aside from this there is also a small network of underground and undocumented private

Fig 41. The mine dumps in the gold mining belt



local miners that re-mine areas of the gold dumps at a small scale to support their small scale economies.

Other popular uses are as sports for young sand surfers who find the smooth sand slopes a very good sports solution. Finally the picturesque scenes afforded by the beautiful gold coloured dunes are a reasonable set for artistic exhibitions, video-graphy and film production. Ephemeral occupation of public spaces is an aspect that is found in these dumps, once there was an outdoor cinema on one of these major mine dumps in the city but it has since been taken down as the mine dump is being re-mined for its gold value addition properties.

With the rise in informality in the area, there is a need for strategies of reclaiming the area and optimising it's potential as a



socio-economic, cultural and environmental resource. The belt that was an edge for the different settlements and boundary between the two areas has the potential of becoming a binding factor using urban design and re-qualification schemes that take into consideration different cultural and economic needs; using urban agriculture for the low income earners, urban reforestation schemes and urban greening. Given its toxic character and weak soil structure, light weight and environmental friendly detoxification of Mining Areas using ecological tools and systems could be used with the aim of providing the very dense settlements in the south with green areas and breaking down the intangible walls in the urban landscape of the city.

Gold mining has shaped the city of Johannesburg right from its foundation, financed most of its development and catalyzed the city's role of being Africa's financial capital and continues to be a strong defining catalyst of the city's urban transformation process. The mining dumps are being recycled and with the new advanced technologies, they are further re-mined for their value and then moved to super-dumps in remote areas. This potential that is further to be realized as prime and potential filled land is a key element in the territorial landscape of the city.

With this in mind, the idea of transforming edges and buffer zones into margins that are stitches and conduits for interaction is one that could be used in the former buffer zone by providing much needed land for the particularly marginalised populations in the townships.

Currently there are initiatives to detoxify the land and plant urban forests in some areas. The idea of breaking this physical barrier will also work towards breaking the intangible boundaries

through interaction of different communities in the spaces.

Given Johannesburg's strong segregation history and the impact it has had on the urban landscape, the process of trying to change this segregative character is complicated. There is a need for a landscape urbanism approach to the process within the existing context that is much more informed than a process of relocation of people. The fact that open spaces and public spaces are a possible area where people from different backgrounds can interact makes them a key tool in the process of trying to change the segregative character.

In conclusion, all hybrid landscapes are unique with diverse socio-economic and cultural networks that are site specific. Therefore the sustainable landscape urbanism approach is to take into careful consideration the different complex phenomena that come into play in the existing urban areas to inform the strategies used in regeneration projects. In areas where segregation is strongly imprinted in the landscape like Johannesburg, public spaces, open spaces that are in neutral territories like margins and boundaries become key in either reinforcing the existing segregation or in providing a seam or stitch between the distinct areas. These neutral grounds have to be attractive enough to both the different groups and their design has to therefore be culturally sensitive so as to catalyse social interaction.



4. Case Analysis

In this chapter an interpretation of the narratives and the data collected from the case studies of the two metropolitan cities of Johannesburg and Rio de Janeiro in the previous chapter is made. Moving on to the next step the focus is on analysing the data results obtained from the two different case studies to make a substantial comparative analysis. In this process, the similarities and differences of the categories of the landscape hybridity in the two urban landscapes, the strategies taken in both cases were analysed so as to come up with the possible answers to the questions paused at the beginning of the research. It was broken down basing on the historical progression and time-line imprints on the landscape, immigration and demographic impact comparisons, the contemporary urban hybrid landscapes of the two cities and a comparison of the landscape strategies and approaches being taken in the two cities to address the quality of urban life.

4.1 Historical Progression and the Political influence on the landscape

From a historical perspective, the fact that the European arrival in Johannesburg was close to two centuries after the Portuguese first set foot in the Guanabara bay in Rio de Janeiro can be seen in the layers of maturity the urban settlements display. Rio de Janeiro has a seemingly stronger tie to its historical central core with colonial architectural and urban design principles physically

etched into the landscape. The historical core of the city centre has a European architectonic language with very colonial buildings. This is based on the grounds of the fact that to its Portuguese colonial masters, this was considered as a temporary home when the royal family took residence in the area during the era of Napoleon's invasion of Europe. Johannesburg in South Africa on the other hand was viewed more as a colony of the British empire. The territory passed through a period of civil war between the English colonials and the Dutch settlers that ended in the unification of South Africa as a British colony at the turn of the twentieth century. With this background the city of Johannesburg had the character of a British colonial mining city while Rio de Janeiro on the other hand still had dominant European city construction principles.

Another difference between the growth time-lines of the two cities is that Rio de Janeiro was a coastal city and vital port while the city of Johannesburg was an inland city whose existence was mainly associated to the existence of gold in the Witwatersrand area although they both have a strong mineral mining legacy. The idea of extraction of resources of the territory for its worth is one that is familiar to both cities with Johannesburg having the iconic mine dumps as evidence to this phenomenon. As a mitigation policy, the city of Rio de Janeiro had a reforestation drive to replant tree species as well as introducing new species like the Mango and the Jack-fruit tree in a drive to recreate the forest ambience in large portions of the Tijuca forest in the city that had been used for sugar cane plantations in the earlier centuries.

Decades of politically institutionalised segregation in the city of Johannesburg had a significant impact on the city's urban landscape creating clear lines of segregation along a north south pattern on the landscape. This divide that is coincidentally aligned

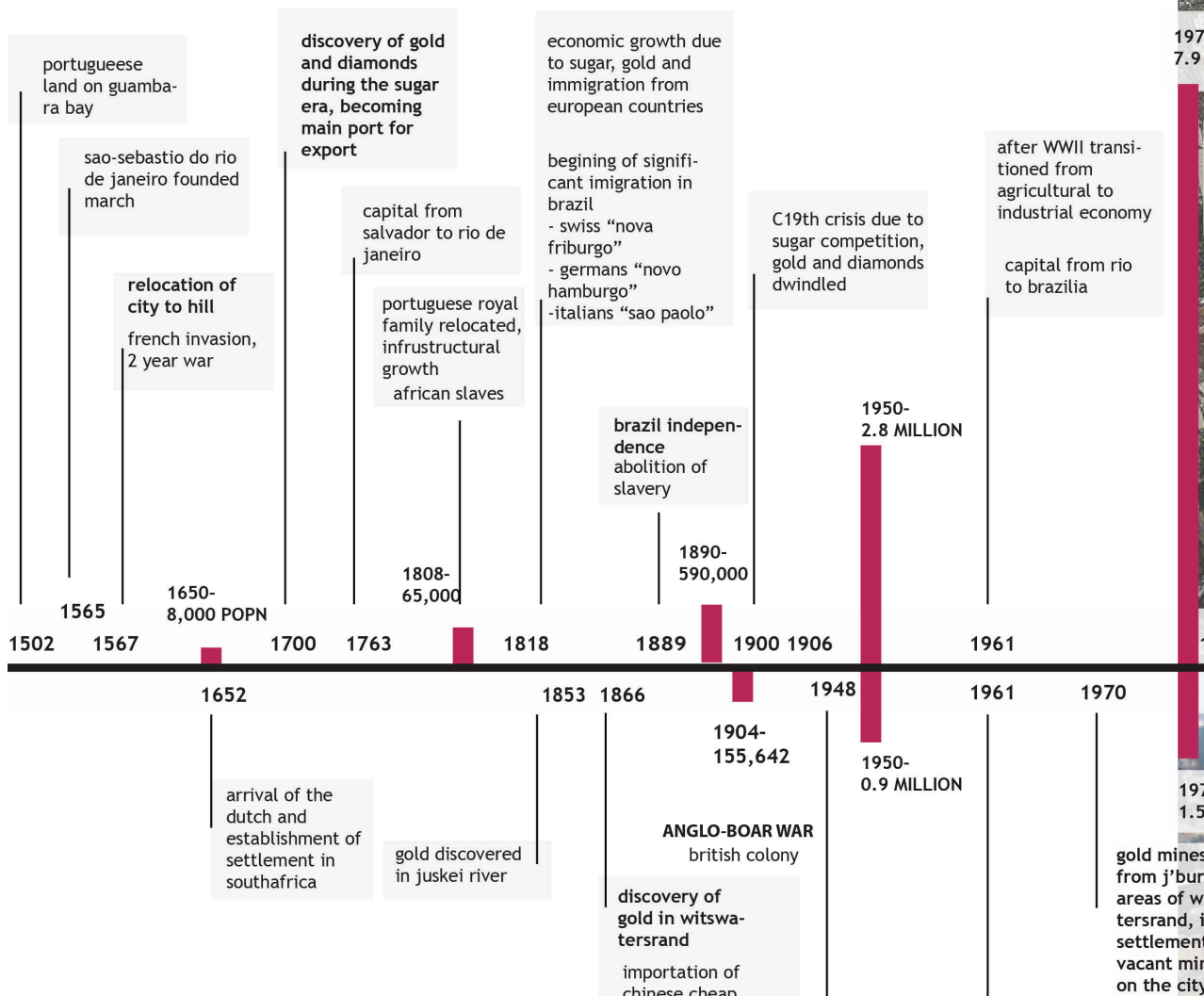
along the gold mining belt, the core of the city's existence. This in essence is a paradox, the fact that the very thing that was core to the foundation of the city is also instrumental in the landscape of segregation in the same city. This is in contrast to the case of Rio de Janeiro where in spite of the existing differences in income, race and class, the city is much more diffused in the sense that the different patterns co-exist in proximity with each other. This co-existence is to a degree a type of symbiotic relationship with the informal settlements providing the formal areas with the much needed labour supply to provide the services needed in the centre for example working as cleaners, nannies, babysitters and labour in the many shopping malls.

The economic boom that started from the 1950s in Rio de Janeiro directly affected the urban landscape of the city and drove a strong wave of expansion that went on a high all the way to the 1970s with the industrialisation boom when there was the most extensive growth of 8.6%. The same is the case with Johannesburg whose political economic changes directly affected the urban and economic expansion as seen in the period after the second world war when there was an increase in industrial production in the city. This was along side the declining gold mining activities at the time and then the occurrence of a second boost in population growth and immigration right after the end of the apartheid era in the late 1990s.

Another strong similarity of the two cities is in their re-branding strategies, to be viewed at a global scale and actively doing this in the attraction of global events like being World cup hosts 2010 for Johannesburg and 2014 for Rio de Janeiro which is also hosting the 2016 Olympic games. These global events come with pressure on the city to show a good facade on an internation-

inhabited by the native american tribes of tupi, puri botocudo and maxakali people before the arrival of the europeans

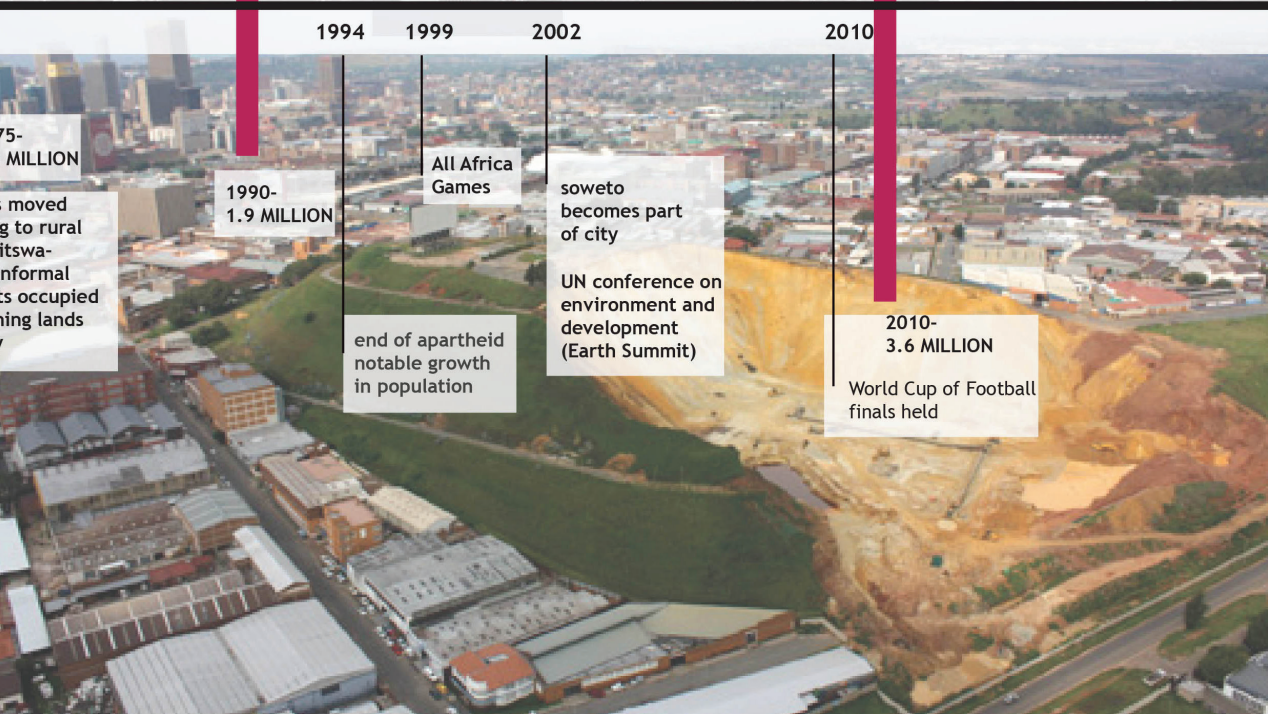
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early bantu speaking groups of se.tswana and se-sotho people settled on the highveld from central africa

Table 8. The time-line Analysis (Socio-Political)

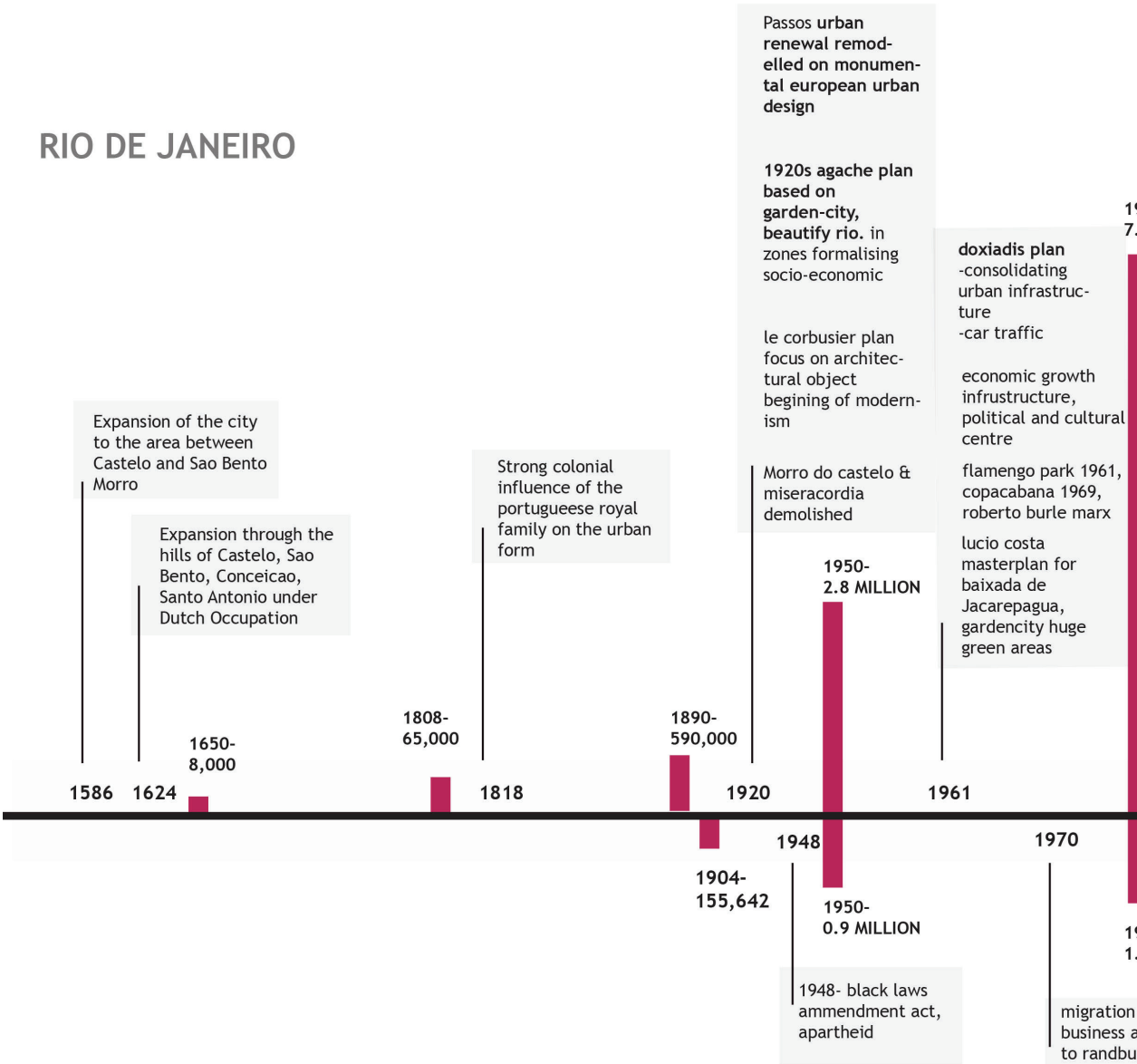


landscape was formed of mountains, sea, and with a cover of tropical forests

plantations and mining in parts of the plains destroy forest

urban settlement constrained by nature

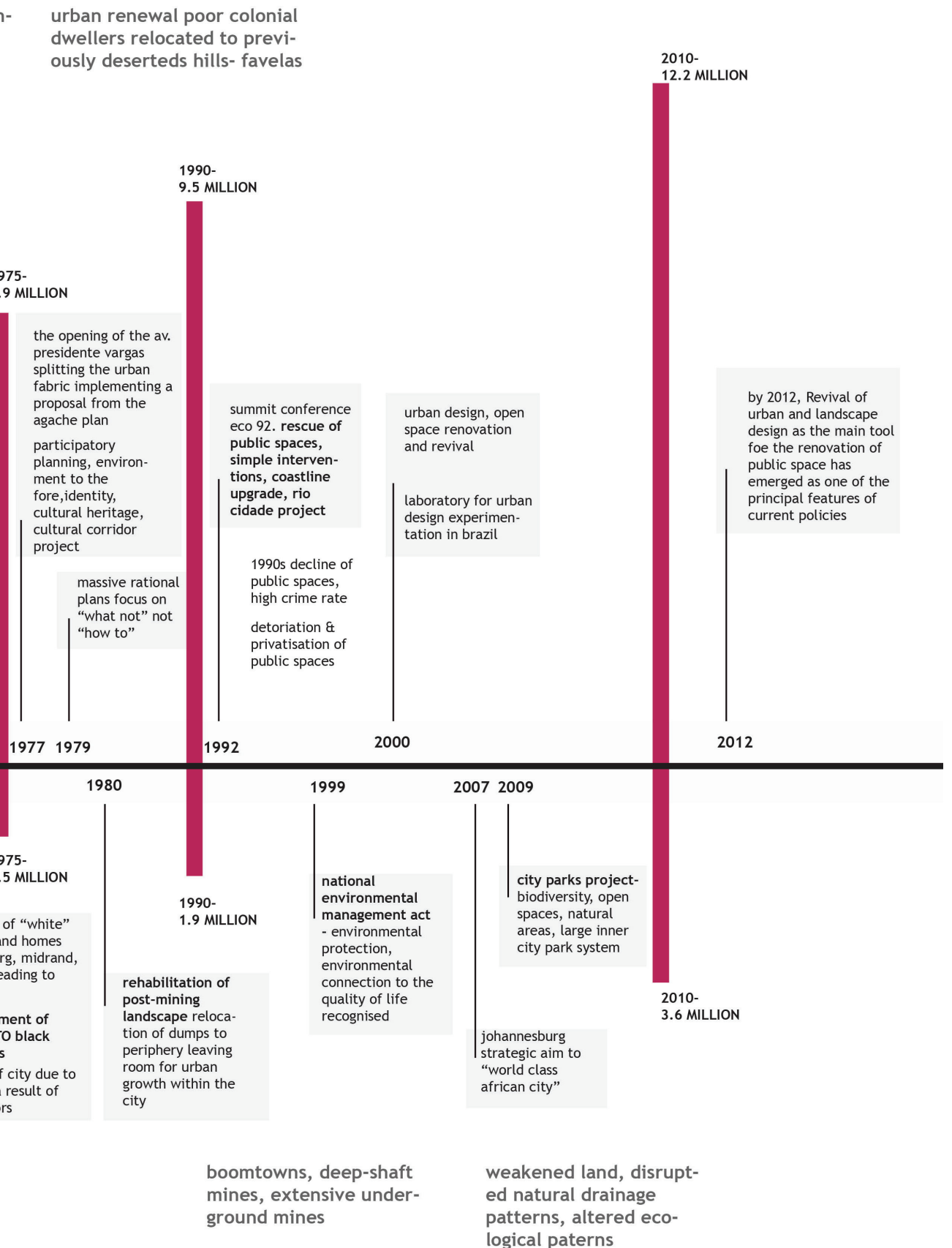
RIO DE JANEIRO



JOHANESBURG

natural savanna grasslands on stretches of plains, hunter gatherers and minimal sub-sistence agriculture with iron-age culture

Table 9. The Time-line Analysis (Urban form)



al platform leading to a lot of 'cleaning up of the city' drives where manifestations of slums and informality are hidden from the view of the guests. In both cities, these events created a boom in the construction and the service sector of the city. It also had a direct impact in the provision of public spaces and regeneration of urban spaces and the process of beautifying the cities with landscape architects taking an active role in this process of adding desired aesthetic value to the city.

4.2 The Landscape of Immigration patterns on the contemporary landscape

In both cases the impact of immigration has been a key factor in the cities' evolutionary processes. The fact that the two cities have had different forms of demographic governance policies even in correspondence to the settlement patterns of different demographic groups has also had different physical manifestations in the urban landscape.

In the case of Brazil, when the different European immigrants were settling in the country, they were drawn to areas where there were already people with similar ethnic and national backgrounds for example most of the Italians settled where there was a strong Italian presence in Sao Paolo and the same for the Portuguese who were drawn to settle in Rio de Janeiro. This phenomenon of similar groups settling next to each other also took occurrence in Johannesburg history where for example there are distinctly Jewish areas and Portuguese areas as well as the same is the case for immigrants from the rest of Africa. The neighbourhood of Hilbrow in the centre of Johannesburg is known to be a location favoured by African immigrants mainly from Nigeria and in Kensington in the Eastern part of Johannesburg, the Kenyan population has a strong presence.

When it comes to cultural and ethnic presence and expression in the urban landscape, the dynamics are demonstrated in both cities with the better example being in Rio de Janeiro. Located in the centre of Rio de Janeiro is the historical African neighbourhood called Pedro do Sal which remains an important area for the cultural heritage of the Afro- Brazilians in the city. Such areas in the city often have a strong sense of cultural ties and the collective identity that continue to attract similar like minded citizens. It is not only a matter of location but these different groups in the city transform the way in which the urban landscape and in particular the phenomenological aspects of how the spaces within these areas are experienced. In such cases where the cultural identity of the spaces is so dominant, the public spaces though public and open to all in the legal sense transforms with different levels of territoriality and sense of ownership and their response and acceptance of strangers.

In terms of the landscape particularly in Rio de Janeiro the different cultural groups have layered their cultures on the landscape over the centuries with a stratification of these architectural and territorial patterns on the urban landscape of the city. The European city planning ideals were particularly evident in what remains in the historical centres of both Rio de Janeiro and Johannesburg. This is more recognisable in the city of Rio de Janeiro especially as a result of the restructuring of the city when the Portuguese royal family moved in, the boldest of these moves was the implementation of the Agache plan in 1977 to create the Avenida Presidente Vargas street in the centre in a Haussman like manner.

4.3 The Contemporary Urban Hybrid Landscape in the Rapidly Urbanising Global South

Bertraud (2001) describes the city of Johannesburg as a Polycentric city with many different nodes as a result of the historic traces of the segregated apartheid city planning principles. This polycentric character is further reinforced by the proposals in the Johannesburg Spatial Development Framework (City of Johannesburg) that highlights the role of the different nodes of the city allocating them with specific identities and hierarchical value in their urban role from Metropolitan, Regional, District to Neighbourhood level. In the strategic plan, the nodes are connected by different transport systems that form the skeleton and structure that determines the city's urban form.

Although Rio de Janeiro on the other hand is also an expansive city connected by an immense infrastructural network, it is still a relatively central city with the city maintaining a core in the historical centre at the Guanabara bay. The similarity between the two cities is in the fact that both have infrastructure as a significant backbone to the city, creating an urban hybrid landscape in the way the structure, built form and nature interact with the infrastructure.

The aspect of nature has actively been critical in the decision making process of the different approaches the two cities have had to urban sprawl. In the case of Rio de Janeiro, urban growth has been controlled and in a way dictated by the natural elements resulting in a more intensive use of the urban land compared to what is going on in Johannesburg where the flexibility offered by the immense flat and expansive territory has afforded the city the luxury of extensive form of urban sprawl. In Johannesburg, the current lack of a central city core that draws the different elements together makes the urban form even more complicated to the urban reader.

Rio de Janeiro on the other hand has a very strong relationship with the port, the sea and the city core which is also reflected in not only the connected urban form but the property prices as well with most locations closer to the centre having higher prices. On the other hand, Johannesburg's property market plays along a tune dictated by speculators and the private real estate developers.

Both Rio de Janeiro and Johannesburg are cities where the territory has been exploited for its resources however there are two different expressions this has had on the urban landscape. In the case of Rio de Janeiro there is a consciousness and recognition of this fact and therefore a move towards environmental recovery for example there was an active re-forestation drive in the areas that had been cleared for sugarcane production in the Tijuca forest. This is a contrast in comparison to the approach in Johannesburg where the mining dumps some of which are being re-mined leave an effect similar to the bleeding scars left on the urban landscape.

Common to both cities is the impact of inequality on both cases and the booming economies where the rich get richer the poor get poorer while the income gap increases. Along with this increasing income gap is the effect on the dynamics of urban criminality. With the increasing inequality gap there is a resultant increase in crime and as a response property developers have cashed in on the idea of exclusive gated communities in both cities. These create even more physical and intangible barriers between the different communities.

In Rio de Janeiro there is a diffusion of favelas across the city resulting in instances of informal settlements within the formal city and in the margin areas between the very steep mountains and the formal city. This close proximity between the different

income groups creates tension in some areas where the people who live in the rich neighbourhoods perceive the favelas as areas that inhabit criminals and are apprehensive towards interacting with them despite the close proximity that they find themselves in.

In the case of Johannesburg the dynamic is a different one with the distance between the informal settlements and the rich neighbourhoods being very extensive. This minimises chances for spontaneous interaction between different income groups outside defined formal settings for-example at work.

However a common aspect in both these cities that seems to momentarily cut across the inequality and racial divides is the notion of the value of the arts and culture in catalysing cultural integration in the public spaces.

In Brazil the racial and ethnic diversities are put aside and there is a genuine momentary sense of cultural integration when it come to matters of the arts in particular music and dance. Samba the language of dance from the Afro tunes in Rio de Janeiro, rap and youthful music manifestations within the favelas and the public spaces in the formal areas is a common denominator. This alongside two other key aspects of Brazilian culture which is the carnival, the church and the Maracana stadium for Rio de Janeiro residents.

In Johannesburg the arts also play a similar role with dance, theatre and music creating common ground for interaction in public spaces and the streets. Similar to the Brazilians, music and dance are languages of collective expression in South Africa. South Africans collectively take to the streets in song and dance to express their feelings be it joy, celebration or anger as was the situation in the riots that led to independence.

4.4 Landscape Approach in the context of Diversity and Hybridity in the Contemporary City and the Intrinsic Urban Issues.

In the case of the two cities, the different experiences when it came to the application of different Landscape architecture approaches in the context of complex urban hybrid landscapes were quite similar with differences in scale and execution as dictated by the prevailing political, social, economic, cultural and natural geographic context. These approaches were analysed and categorised, according to morphological, functional and spatial aspects of landscape hybridisation, key strategies were adapted to the hybrid contexts to create both tangible and intangible connections and their resultant effects in terms of improved quality of existence for the inhabitants.

- Policy

At a city-wide scale the fact that Rio de Janeiro is a UNESCO cultural site nominated under cultural landscapes and also earns a great deal from it in the tourism industry puts strong weight on the city to adopt and implement strong policies that protect this cultural heritage. The new Master-plan of Rio de Janeiro (2011) recognises the city's urban landscape and all its hybrid attributes as the main valuable cultural treasure of the city. In doing so the city actively implements policies that protect the landscape and its key features with sustainable goals and cultural preservation at the territorial scale.

At the landscape scale in the favelas the city within its Favela renewal policies incorporated aspects of this most notably in the Favela Bairro Policy which had a big focus on the organisation within the favelas and improving the quality of the neighbour-

- Strategy:**
- Interventions within the informal settlements using **landscape elements from the formal city**. Like open spaces and small squares.
 - **Stitching** factor of public spaces along the **margins** between the formal and informal settlements

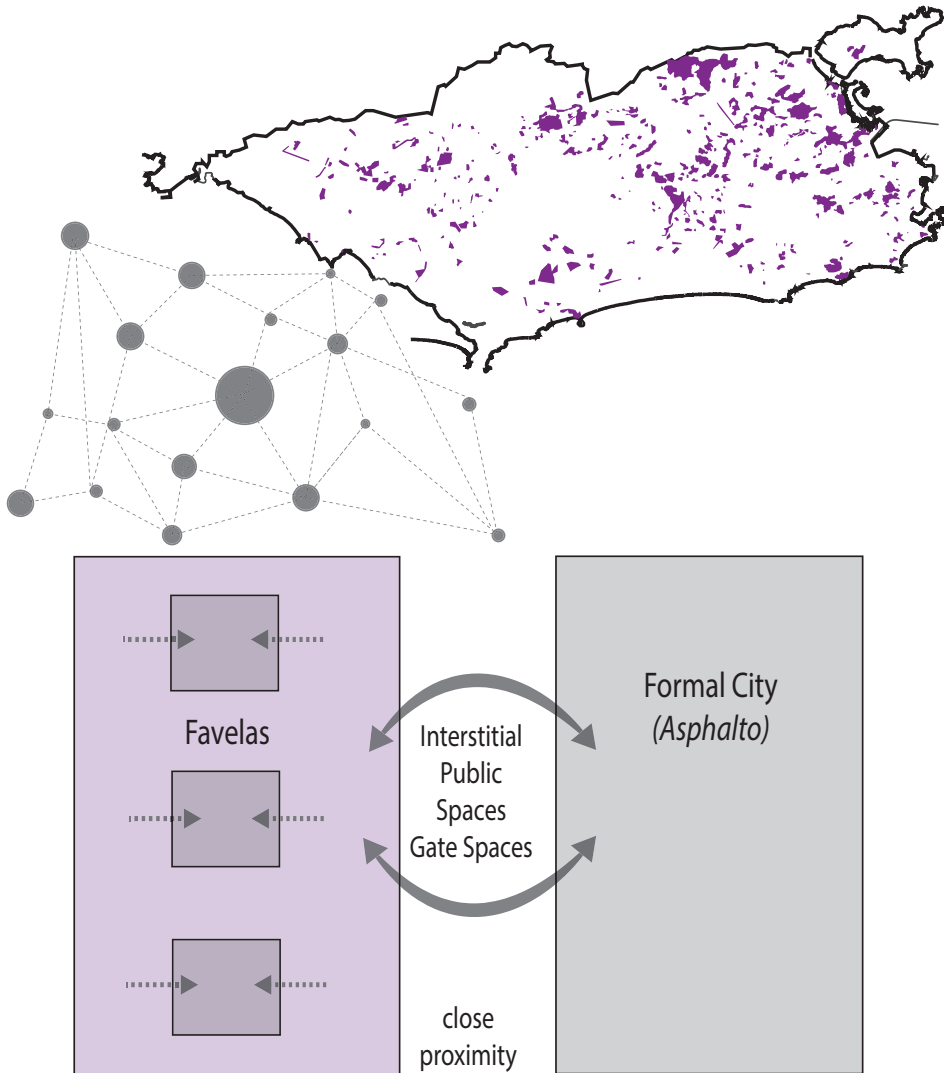


Fig. 42 Strategic interpretation for Rio de Janeiro

Strategy: - Interventions within the informal settlements using **landscape elements from the formal city**. Like open spaces and small squares.

- **Territorial Scale** strategy of connecting the nodes using green corridors. **Connecting the Dots**

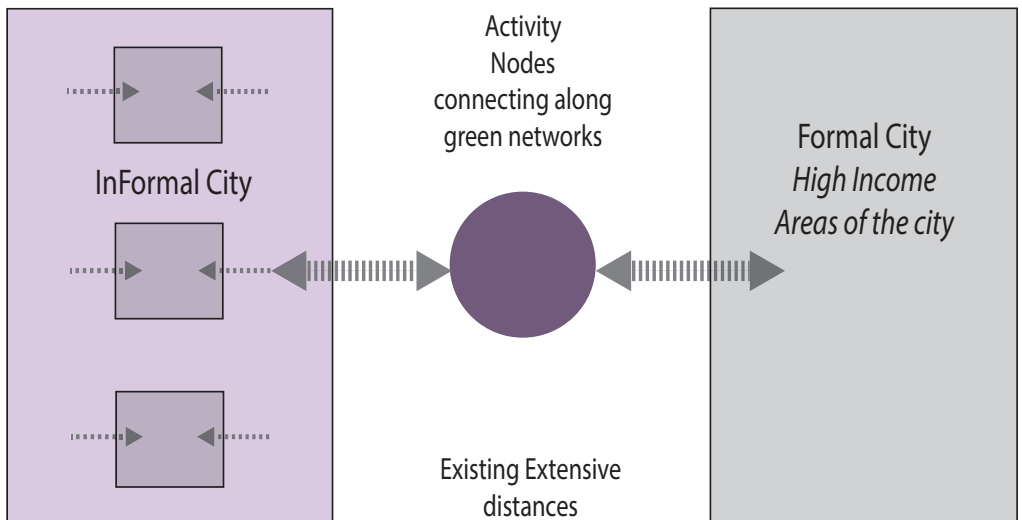
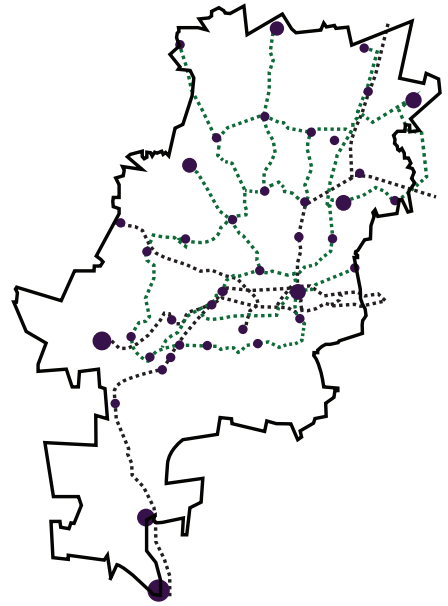
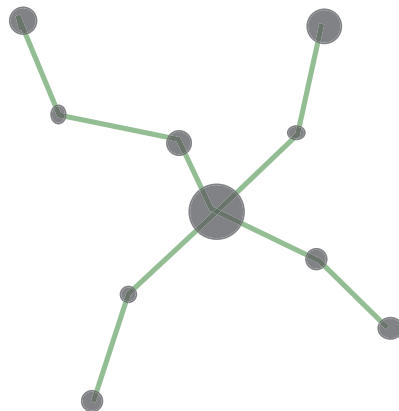


Fig. 43 Strategic interpretation for Johannesburg

hood through urban design and landscape architecture. The ongoing Growth Acceleration Programme (PAC) policy however also has these regeneration projects but at a grander scale using big infra-structural interventions also of public spaces like the Manghuinos project.

On the other hand in Johannesburg, the Strategic Development Framework (SDF), puts into consideration the urban landscape quality actions. Within this policy there is the provision for the Johannesburg Corridors of Freedom project for city rejuvenation. In the corridors of freedom project, different strategic activity and economic nodes are connected using green landscape corridors.

Within policy design in the city, the affairs regarding landscape and green spaces in the city are covered under the environmental clauses. Under these environmental policies envisioned for the city exist proposals of the concept of green networks and networks of open green spaces that are connected with the aim of greening the city.

The city also has a body; the Johannesburg City Parks that is specifically tasked with the mandate of planning, design and management of the green and open spaces in the city. It is within this framework that most of the new park developments in the areas where there is no private interests like the Soweto area are incorporated.

It was interesting to note that in both cities that face quite similar issues, the attention to the formation and training of architects, landscape architects and urban designers in dealing with questions of informality in the city was quite limited. In both cases however there is active on-going awareness and discourse at the

university level but most of the work on ground is still under large scale and high budget government commissioned projects.

- Accessibility and Connectivity

Common to both contexts, the challenges of improving connectivity between adjacent neighbourhoods is a key element in the urban design tools available to address the issues of connectivity. For integration and an improved urban quality in the landscape, physical connectivity is vital in providing the socio-economic loops across the entire urban form.

Interventions that may seem as simple as a pedestrian bridge over infrastructure like railways or motorways to ease crossing the road can break down barriers between two different neighbourhoods.

One such intervention is the intervention by Jorge Mario Jáuregui in Manghuinos where he raised the railway line from the street level resulting in the lifting up the barrier which was a strong separation element between different favelas within the complex. The space below has been transformed from a barrier space into one with the capacity to connect the surrounding elements.

Another example of this approach is in the bridge by Oscar Niemeyer that has become an icon of Rio de Janeiro that connects the favela of Rocincha which is the largest favela in the city and one of the few pacified favelas of the city to the rest of the formal city across the very busy North heading motorway. These localised interventions in Rio de Janeiro are more relevant and efficient owing to the close proximity between areas with differing urban quality.

While in Johannesburg given the extensive distances between most areas with different income levels, the approach takes on a different concept. Here the idea of connectivity takes on a territorial scale with the focus transforming to the provision of affordable and efficient public transport systems across the urban landscape and not particularly the localised scale between neighbouring areas.

- Public Services

One other strategy that is in place in both contexts is in the use of public services in marginalised areas like schools, hospitals and sports facilities so as to create a sense of social inclusion among the residents. These services that are linked to urban life in the global south especially in Africa are often insufficient in the informal areas within the urban landscape. Their location also within the informal areas or along the margins with the formal areas also form a key role in what type of integration will take place whether it will be inner community integration or one that focuses on the people within and those from outside the settlement.

Within the corridors of freedom project for Johannesburg, there is the NASREC new sports complex in the gold mining belt corridor which is a key element that brings human traffic from not only Soweto but the rest of the city to the area giving relevance to the area as a socially binding area. The existence of other cultural services like the Apartheid museum and the horse racing rank in the same area also has a pulling effect on horse lovers and sports betting enthusiasts in the area.

Sports is a unifying factor in both cities for-example in Rio de Janeiro soccer playgrounds and the Maracana stadium are some of the neutral grounds where people interact freely within the same

place. In Johannesburg sports has significance in mainly two sports, soccer which is considered a game for the blacks while rugby which was mainly a white mans sport are both crowd pullers in the public spaces.

- Social- Cultural Activities

The use of the arts and cultural activities has an important role as noticed in both cases as they tend to drive inter-cultural integration. The artistic use of public space and the streets is one that is becoming the norm in both cities with temporary art exhibitions and other public activities that draw members of the community with different diversities to interact together. Ethnic Music, dance, contemporary forms of music like rap and hip hop dancing, spontaneous choreographed dancing known as flash mobs and other cultural expressions ignite the vibrancy and the life in the streets and public spaces.

At a neighbourhood scale, the use of free public gyms within the public spaces in both cities was very strong and is particularly efficient in the city of Rio de Janeiro. This taps into the cultural appreciation for physical fitness and wellness of the citizens that cuts across racial and income levels evident in the existence of private gyms in most neighbourhoods both in the favelas and the rich neighbourhoods of the city.

A considerable number of people use the public gyms as part of their daily fitness routine and go running along the beach and in the streets in the mornings and evenings for the youth and all through out the day mainly tourists and retired people. The public gyms in these areas are areas where there are opportunities for social interaction as the lines of communication are open across

cultural and racial boundaries.

The interesting fact is that although the rich can afford and are probably subscribed to a fancy gym, they still are tempted to take a break in their individual runs to make a few stretches or lift some weights or use the equipment that is located in the public parks along their daily running route.

The same concept seems to be working in Johannesburg as well where the equipment in the older parks show signs of wear and tear as a reflection of their active use by the residents. In the public gyms, the role of custodian of the public property is always taken up by the regulars when they see a new face struggling to use the equipment and is a seemingly honest and positive impact as their sense of responsibility and collective ownership minimises vandalism of the property. The collective goal in the gym spaces opens up lines of communication between different racial and income differences as they exchange ideas on their fitness routines and how to best use the equipment as the more experienced take on the role of being gym instructors.

Interventions in the public spaces are best optimised by taking into account the cultural role and the vibrancy that already exists in the community so as to catalyse and not create clinical, systematic and spotless spaces. They should be attentive and conscious of the context for example in the case of the Walter Sisulu square in Johannesburg and the Manghuinos project in Rio de Janeiro which were both state run projects that seem cold and out of the local context.

Cultural activities like music, dance, rap and theatre are tools of humanising the state interventions that seem isolated and

disconnected from the population. With this comes the connection to the adoption of more efficient participatory approaches that are not just done on paper as is the case in most of these projects. Just like ephemeral use of these open spaces in artistic forms, they have the power to raise curiosity and draw users into getting engaged in the process.

- Landscape Scale Interventions

The need of the recognition of the scale of the intervention that is needed, for-example in Johannesburg where the city is sprawled in isolated settlements and institutionalised segregation had it's imprinted mark at a territorial scale, there is need for a landscape intervention at a territorial scale. In the government intervention at Manghuinos a full landscape scale project was used in an attempt to integrate the favelas within the complex area that is already fragmented by existing infrastructure and rivers that pass through the area. Connecting it to the city, the project incorporates the existing research and hospital foundation that draws residents from other areas and is vigilantly patrolled by the police. This area is one of the safe islands in this favela complex where gun shots and drug loads still reign and claim as their territory.

When it comes to training of professionals, the planning department in the universities of South Africa follow in the Anglo-Saxon education model where planning as a discipline is apart from the architectural or urban design scale unlike the case of the European systems where there is a strong awareness of territorial planning.

In Johannesburg where the divide on the landscape is more

spread out at a territorial scale, large scale interventions at a similar scale like the mining belt in the context are being adopted. In the context of the corridors of freedom project, the gold mining belt creates a complicated area for its potential to create urban rejuvenation at a territorial scale. Within the proposal, it is viewed as a connection of different nodal projects within one block that is hoped will create a bonding strip between the north and the south of the city of Johannesburg.

- Margin Area Interventions

In both Rio de Janeiro and Johannesburg the idea of open spaces that are similar in concept to the civic squares or the Italian Piazzas was present within the city centre. However in Johannesburg they are not as popular compared to the equipped or the functionally oriented public spaces that offer the users a clear idea of how to use the space.

The example of the Walter Sisulu square in Kliptown near Soweto where the freedom charter was signed, the square maintains a monumental ambience. The former informal markets that were associated with that area were designed for in the new monumental space but however the informal market vendors choose to occupy the space immediately outside the allocated stalls. Most of the vendors spoken to attributed this decision to the high rent charged by the city for the stalls while a smaller number when probed further said they chose to stay outside because their produce received more visibility and was more accessible to the customers on the street.

This highlights the issue of governance and need for coordination between the city government and the sellers as well as the

designers of the space within the participatory design process of intervention. Perhaps given the fact that there has already been a huge investment of public funds in the imposing concrete structure more discussions will have to be initiated for a better understanding by the city government and the sellers as well as the community at large.

In contrast to this square, the same neighbourhood has a small public space that is always parked to capacity with residents most of the week throughout the day with users interacting in the space. In the evenings and on the weekends there is always an event going on in the parking lot next to this public space. The empty Walter Sisulu square is located in a relatively diverse neighbourhood in terms of racial and demographic composition and yet is not as frequented as the adjacent street where the life and the party is always going on next to the small equipped public park.

There is a clear recognition for participatory approaches and the role it has on the acceptance of the spaces in the urban landscape for-example the impact of the Manhguinos project and the Soweto Walter Sisulu Square. They are well designed in terms of the design set of tools but they are still not accepted in the public and viewed as the governments imposing themselves in the daily livelihoods of the population.






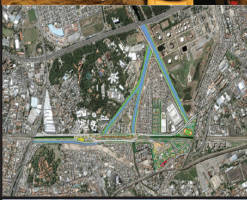

STRATEGIES (Rio de Janeiro)		LANDSCAPE HYBRIDISATION		
		Morphological	Functional	Spatial Use
ACCESSIBILITY AND CONNECTIVITY		<ul style="list-style-type: none"> - The city is well connected on a strong backbone of infrastructure connecting the favelas in to the urban fabric. 		<ul style="list-style-type: none"> - Within the informal settlements in the favelas there is need for improving connectivity and the removal of dead-end routes. -
PUBLIC SERVICES		<ul style="list-style-type: none"> - Active provision of social services in areas of need under the different government projects - hospitals, schools and community centres especially in areas with much need like the favelas. 		
PUBLIC SPACES		<ul style="list-style-type: none"> - Open spaces and public spaces of different categories and scales exist in the city and are accessible. - The active use of public spaces in the government interventions in the favelas is common practice in the city. 		<ul style="list-style-type: none"> - Use of the public spaces for the activities that attract cultural diversity like the arts and music. - Ephemeral and temporary art and community events attract activity in the public spaces.
POLICY		<ul style="list-style-type: none"> - Different policies, PAC, Favella Bairro - Favella Bairro was really specific with integrating the favelas with the urban fabric. - the provision of quality neighbourhoods in the favelas. 		<ul style="list-style-type: none"> - The favella bairros project had a direct emphasis on the need for small neighbourhood scale interventions in the public spaces within the favelas.
SOCIO-CULTURAL ACTIVITIES			<ul style="list-style-type: none"> - Small community initiatives using urban agriculture in the void spaces with small scale community gardens. 	<ul style="list-style-type: none"> - Use of public spaces and the streets to carry out cultural activities - Social and cultural events ignite the interest of the people in the potential of the public spaces. - Dance, music and exhibitions that are temporary.
LANDSCAPE SCALE INTERVENTIONS		<ul style="list-style-type: none"> - Under the government intervention projects, there are large scale projects that are projected to have a territorial impact on the urban landscape. 	<ul style="list-style-type: none"> - Different policies, PAC, Favella Bairro 	
MARGIN AREA INTERVENTIONS		<ul style="list-style-type: none"> - Most of the interventions are in the pacified favelas closer to the centre with less interventions in the northern part of the city. - Need for interventions in the spaces between the formal and informal city. 		<ul style="list-style-type: none"> - The existence of small grassroot groups and communities that drive intergration in the public spaces using the language of music, hiphop, samba and the arts.

Table 10. Strategies in Rio de Janeiro






STRATEGIES (Johannesburg)		LANDSCAPE HYBRIDISATION		
		Morphological	Functional	Spatial Use
ACCESSIBILITY AND CONNECTIVITY		<ul style="list-style-type: none"> - Existing infrastructure and public transport BRT connecting North and southern suburbs. - Gautrain which is the underground does not reach Soweto 	<ul style="list-style-type: none"> - Encroachment of urban functions on the minimal agricultural areas of the city. - Infrastructure disrupts natural ecosystems, 	<ul style="list-style-type: none"> - There is a need for more Human scale... - Connecting green spaces at a human scale
PUBLIC SERVICES		<ul style="list-style-type: none"> - Site and contextual specific services. - Soweto Theatre in the south is a service that attracts different diversities of the population 		
PUBLIC SPACES		<ul style="list-style-type: none"> - City parks provision for different types of public spaces in different parts of the city 		<ul style="list-style-type: none"> - Privatisation of public spaces is a limitation and the increase in gated communities in the city is a sign of increasing segregation. - Within the neighbourhoods the spaces are a source of interaction
POLICY		<ul style="list-style-type: none"> - Corridors of Freedom from the Strategic development framework ideas adapted in the policy - Government environmental policy needs to strengthen on aspects of land management and protection of the natural landscape in the city. 	<ul style="list-style-type: none"> - Need for policy to use the potential for green networks to feed the built environment - Existing policy of raising awareness of ecosystem services and value of urban agriculture 	<ul style="list-style-type: none"> - The Strategic Development Framework for the city calls for a network of open spaces. - Need for policies that promote equitable distribution and accessibility to quality natural green areas
SOCIO-CULTURAL ACTIVITIES			<ul style="list-style-type: none"> - The diversity of urban dwellers is reflected in the way that they use the landscape 	<ul style="list-style-type: none"> - Open exhibitions and use of the arts - Music and theatre in the open spaces and public areas
LARGE SCALE INTERVENTIONS		<ul style="list-style-type: none"> - The Corridors of Freedom Project under the strategic development plan of Johannesburg trying to create networks across different nodes along the BRT nodes. 	<ul style="list-style-type: none"> - The Corridors of Freedom Project under the strategic development plan of Johannesburg in this case aims at creating connections across different areas of the city 	
MARGIN AREA INTERVENTIONS		<ul style="list-style-type: none"> - Existing infrastructure and public transport BRT connecting North and southern suburbs. - Gautrain which is the underground does not reach Soweto - Need for projects in the margin spaces between the formal and informal areas. 		<ul style="list-style-type: none"> - Music and theatre in the open spaces and public areas that cut across boundaries of race in the informal areas.

Table 11. Strategies in Johannesburg

5. Conclusion

The research set off with the objective of investigating the existence of the character of an urban hybrid landscape typology as a result of urbanisation in the developing world by comparing the urban landscapes of two cities one in Africa and the other in Latin America. To achieve this objective, the research set out with the goal to answer two main questions;

- What is the character of the new typology of hybrid urban landscapes of the diverse cultures and social populations in the rapidly urbanising cities of the global south? What is the form and identity of these new hybrid landscapes?
- How do these hybrid landscapes affect the quality of life in the urban areas? How can this information be integrated into landscape architecture and planning in the developing world cities?

At the initial stages of the research basing on the discourse of the cities in expansion of the Latin America and African continents, a considerable number of cities which included Mexico City, Buenos Aires, Bogotá, Rio de Janeiro, Sao Paolo, Lagos, Kinshasa, Cairo, Nairobi and Johannesburg were analysed. Using a criteria based on the comparability factors and hypothesis that there was

a higher potential of stronger research quality within the given time limits of the research process the two cities of Rio de Janeiro and Johannesburg were selected as the two cases to be compared.

From the review of literature theory, the definition for urban hybrid landscapes taken was one that saw them as a typology of landscapes that are in a continuous creative process of a new unique identity as a result of the coming together of distinctly different landscape typologies in a complex holistic unit.

In line with the first question as to the existence of the hybrid urban landscape typology in the new cities of the global south, the thesis recognised the existence of the different types of hybridisation in the urban landscape. Along with the recognition of the values of hybrid landscapes and the values of hybrid populations. The cities in the earlier centuries had unique or strong identities tied to contextual attributes that are etched in their urban character. However in the cities of today's global context, the issues have been globalised in a sense with issues of inequality, poverty, informality and spatial injustice.

Similar urban hybrid landscape patterns are seen at varying scales in different contexts of the world, taking the case of Johannesburg and Rio de Janeiro, the policies and steps taken were similar yet distinctly different in terms of scale, but the impact on the urban landscape is quite similar, even the approaches are similar but the impact of these approaches depend on the implementation.

Moving on to the second research question as regards to the quality of life in the hybrid urban landscape, it was found that owing to the similarities and differences in the hybridisation of the landscapes of the two cities, the strategies and policies that are used in

both cases are also similar and potentially successful in both cases while some only in one particular location. This was attributed to the underlying historical time-line political and socio- economic dynamics; the policy of institutionalised segregation was stronger and relatively more recent in the Johannesburg landscape than in Rio de Janeiro where a longer history of a search for an ideal state of integration resulted in a more diffuse hybridisation on the landscape in the latter than in the former.

When it comes to policy, government commitment is mainly focused on the quantity and not quality of the provision of services to the population which reflects on the political interests of the leaders. With time however this attitude in Johannesburg is expected to transform as has been the case of Rio de Janeiro where the landscape approaches are gaining a strong foothold as an intrinsic aspect of the quality of the environment being produced even in public and social housing. This was as a result of the awareness drives in the communities to make them understand the values and their rights to quality neighbourhood environments. With more communities becoming aware of the role public space and landscape architecture projects have in their daily lives, there are instances where there is an active demand for these services by the local initiatives from the government.

There are indeed a significant number of ongoing projects that fall within the scope of the work done by landscape architects, but it is still perceived to be a luxurious profession especially in the African context. Therefore the role for the landscape architect as perceived in the Western world context is thought to be one that is too grand for the African context. This is so despite the fact that some of the principles and landscape architecture design tools are being used by the different stakeholders.

Landscape architects are employed at the city level to see to the design and management of the public parks, gardens and the aesthetics aspects of the city. However their active role and involvement in the tackling of more pressing needs of the city are not recognised. This said, non the less the idea of time and its role in the acceptance of projects is critical in this context as the cultural mind-sets of the people are changing, the more they become aware of the positive attributes provided by the landscape architecture discipline.

The concept of time is therefore an affiliate that can not be ignored in this process and should be put into perspective even when newly completed projects are seen as abandoned in the present time.

The transferability of these tools and approaches from the European context to the developing countries needs to be done with caution if not kept at a limited extent. Principles that seem universal in essence for example the right to public space and a good quality neighbourhood environment still pale in relation to 'tangible' questions of affordable housing, access to good roads and infrastructure. This validates the idea of incorporating these principles into policy making not just specific to landscape quality of the city but incorporating them into the neighbourhood quality of affordable housing or environmental concerns.

In this pragmatic sense, they will be more efficient before a unique stand alone policy on landscape architecture practice within the urban planning framework is approved. Such are the philosophically adequate techniques and strategies that are needed in the context of the global south where the political dynamics of public policy favour physical hands-on government operas that easily impress the general local population.

The notion is that Landscape research is one that is strongly tied to the aspect of time, projects and policies done today are best realised and assessed within the appropriate time frame. Future research would be very relevant on the actual impact of these projects to specific demographics for-example the children born when these projects were realised and how these have affected their livelihoods in adulthood.

In retrospect the research methods would have had an interesting and informative approach had a more ethnographic approach to data collection been taken over time assessing the ongoing projects in the now and more importantly their impact on the communities over a prolonged period of time for-example 10 or 20 years from now. But unfortunately the research scope was limited to the aspects of time and finances.

Another research limitation was the fact that the interest areas of the specific case studies were located within areas that were perceived and in a sense known to be unsafe due to high instances of crime and gun violence, this limited optimum observation data collection as most of the research had to be collected during the day and could not take place over long stretches of time like an entire day but had to be at random points of the day to reduce the exposure time to the perceived danger.

For-example when collecting data in Manghuinos the researcher could not take photographs within the favela because the inhabitants of the favela did not take too kindly to being photographed and so had to rely on note taking and sketches as a data recording tool.

The cities of today have a completely different set of issues that the planning fore fathers could never have imagined and for this reason perhaps there is a need for tailor-made pragmatic approaches in landscape and urban design that need to be incorporated into planning for cities and the daily management of cities. Some approaches are transferable from one context to the next with a bit of adjustment and refinement to address the specific contextual need while others are site specific.

The research had another result that became more apparent as the research progressed. This was the fact that it became clear the wide scope of research needed in the questions of landscape typology, landscape architecture, landscape management, landscape planning, policy and practice in the cities of the global south. Although there are seemingly direct relationship between the field and the environmental campus that is often associated with health benefits and sanitary facilities, there is still a considerable gap on the available literature on this fact.

Some of the questions raised for future research are;

- Is the practice and consumption of landscape architecture an effect of globalisation? Do these cities in the global south 'copy and paste' western urbanism as a mechanism of self inclusion in the phenomenon of global cities?
- In the context where landscape practice is considered to be a luxurious element and not a fundamental necessity falling low in the hierarchy of needs; is there a corelation between the landscape architecture projects implemented in the informal settlements and the quality of life of the residents?

- At a more specific scale within the new projects located in the informal settlements, the replication of a public space module (that is composed of a children's play area, sports and gym equipment) in design is seen in the cities of Johannesburg in Africa as well as in Rio de Janeiro. How efficient is this module that is plugged into less privileged neighbourhoods in both cities?
- Future research is needed on the impact of these module spaces that are replicated from one context to the next and how this ties in with the urban form of the local context. Among city officials and community leaders as well as government officials in the process.

Is there an ethical design awareness one that uses adequate consciousness in addressing the specific contextual problems or is it possibly true that the cities of today have a similar pattern of landscape one that is universal and therefore the tools to address them are similar. The research was on the notion of landscape typology, as an extension of urban typology, particularly as it relates to socio-economic phenomena and segregated spaces.

In conclusion, there is a need for the recognition of these hybrid landscapes for what they are; that is a representation of the authors or artists from a hybrid culture that is the reality of the majority of today's cities. The landscape design and management approaches though transferable to a certain extent should therefore be conceived within the context of their hybridisation as a value in dealing with them.

There is a strong need for flexibility in the way in which landscape architecture and urban design is practiced in the global

south. In this context where the dynamics of the cities are flexible, organic and not fixed by strict rules as is the case of Western cities, the potential to develop their own unique responses to this flexibility is relatively high.

Chaos theory defines chaos as a system whose organisation we do not yet understand, which is the case of the complex hybrid systems in the cities of the global south. Within the apparent chaos, spontaneity, transformation, evolution are terms well-ingrained in the urban landscape of these cities. The chaos, the hybridity, the organic, informality, formality all are the texture that constitutes the spirit, the genius loci of these urban landscapes.

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