

Performance: it's in our nature.

A design investigation of a botanic garden that investigates the use of change as the medium with which landscape architects design to generate form in order to highlight the performance of a landscape, drawing inspiration from the principles of another performance art: dance.

By Sunè Bos

The National Botanical Gardens of South Africa.

2 Cussonia Avenue. Pretoria. South Africa.

E28°16'19.8" S25°44'18.2"

Study leader: Graham Young

Studio master: Johan Nel Prinsloo

Course coordinator: Arthur Barker

Submitted in partial fulfilment of the requirements for the degree Magister In Landscape Architecture [Prof] Department of Landscape Architecture, Faculty of Engineering, The Built Environment and Information Technology. University of Pretoria.

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Abstract

Botanic gardens have always been about plants. The design of botanic gardens offers a unique window into how we humans have used and valued plants over the past several centuries. Man's relationship with, and attitude towards nature has been directly influenced by the economical, social and environmental conditions that prevailed during that era. This in turn has greatly influenced the way landscape design, and in turn botanical garden design, has been approached and shaped throughout the centuries as well as how man experiences the landscape and plants specifically.

It became evident that man has the habit to submit control over nature, by pruning and shaping nature to be confined by manicured borders or edges. Whether these borders are created to form a romantic picture of nature or whether it is to perform certain ecological functions for the environment, these borders have the inherent ability to limit the potential of nature to grow on intuition and dampen its ability to perform as the living, changing, dynamic entity that it is. The design of most botanical gardens, including the design of the Pretoria National Botanical Garden, tend to comply with this idea of control over nature.

This dissertation investigates the relationship between people and plants, as well as people and the landscape, within the Pretoria National Botanical Gardens, and focus on the redesign of a part thereof by using the regional landscape as the link between them. This new design is approached in a way that celebrates the extraordinary qualities of plants without limiting the potential of plants to perform in its own unique way. This was done by first looking at current theories in the landscape architectural profession on how to design with change as the medium, and second to find inspiration on designing the change and movement of a living entity (nature) and the way to guide this performance, through another performance art: dance.

The landscape design of the botanical garden challenges the way we interact with nature in a landscape in order to restore the interrelationships among plants, animals and humans and clearly communicate to the audience the fact that nature is alive, flexible and changing. It also shows that nature shouldn't be submitted to full control, and that this flexibility of nature is one of its greatest assets.

Samevatting

Botaniese tuine het nog altyd gegaan oor plante. Die ontwerp van botaniese tuine bied 'n unieke venster oor hoe die mens plante gebruik en waardeer het die afgelope dekades. Die mens se verhouding met, asook houding jeens die natuur was direk beïnvloed deur ekonomiese, sosiale en omgewingsfaktore wat gedurende daardie era geheers het. Dit het 'n groot invloed gehad op hoe die ontwerp van landskappe, asook botaniese tuine, benader en gevorm is deur die eeue, asook hoe die mens die landskap en spesifiek plante ervaar het.

Dit het duidelik geword dat die mens die gewoonte het om die natuur te oorheers deur dit te snoei en vorm en sodoende te beperk tot gemanikuurde rande en grense. Of hierdie grense daar gestel is om 'n romantiese prentjie van die natuur weer te gee of om sekere ekologiese funksies vir die natuur uit te voer, dit het die inherente vermoë om die potensiaal van die natuur te beperk. Dit beperk nie net die natuur om te groei op intuïsie nie, maar ook om soos die lewende, veranderende, dinamiese entiteit wat hy is, op te tree. Die ontwerp van die meeste Botaniese tuine, insluitend die Pretoria Nasionale Botaniese tuin, is grootliks gebaseer op so 'n oorheersing van die natuur.

Hierdie tesis ondersoek die verhouding tussen mense en plante, asook mense en die landskap, in die Pretoria Nasionale Botaniese tuine, en fokus op die herontwerp van 'n gedeelte daarvan deur die streekslandskap te gebruik as die band tussen hulle. Die nuwe ontwerp word benader op 'n manier wat die buitengewone/uisonderlike kwaliteite van plante vier sonder om hulle potensiaal om in hul eie unieke manier op te tree, te beperk. Dit is gedoen deur eerstens te kyk na heersende teorieë in die landskapsargitektuur profession oor hoe om te ontwerp met verandering as die medium. Tweedens is daar bepaal hoe om inspirasie te kry in die ontwerp van die verandering en beweging van 'n lewende entiteit (die natuur) en die manier om hierdie uitvoering te lei deur dans.

Die landskapsontwerp van die Botaniese tuin daag die manier uit waarop ons met die natuur omgaan in 'n landskap om die verhouding tussen plante, diere en mense te herstel en duidelik met die gehoor te kommunikeer dat die natuur lewendig, buigbaar en aan die verander is. Dit wys ook dat die natuur nie onderwerp moet word aan volle kontrole/oorheersing nie en dat hierdie buigbaarheid van die natuur een van sy grootste bates is.

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Chapter 1

THESES SPECTACLE

An introduction to botanical gardens.

1.1 Title: Performance: it's in our nature

A design investigation of a botanic garden in which the use of change is investigated as the medium with which landscape architects generate form in order to highlight the performance of a landscape, drawing inspiration from the principles of another performance art: dance.

1.2 Introduction

The main focus of botanic gardens has always been plants. The history of botanic gardens is a clear representation of how humans have used and valued plants over the centuries (Johnson 2007). In current times, botanic gardens pursue the preservation of tens of thousands of plant species before they become extinct. According to the Botanical Garden Conservation Institute (BGCI) they are becoming key players in both the conservation of plants and in the education of the people who come to see them. It is estimated that as many as two-thirds of the world's plant species "are in danger of extinction in nature during the course of the 21st century, threatened by population growth, deforestation, habitat loss, destructive development, over-consumption of resources, the spread of alien invasive species and agricultural expansion" (BGCI 2000:1).

Botanic gardens are potentially well placed as they tend to be situated in urban areas. There is beauty in the irony that the very thing that is destroying nature is creating the prime opportunity for botanic gardens to:

- 1 inform and encourage action against the loss of the world's plants species;
- 2 show the incredible diversity of the plant kingdom locally, nationally and internationally;
- 3 highlight the interaction of plants in ecosystems, their relationships and how they provide life support functions for a whole range of species, including humans;
- 4 communicate the importance of plants in our lives economically, culturally and aesthetically.

Botanic gardens are therefore regarded as ideal places to encourage exploration of the relationship between people and nature, and how people experience nature: "by their physical framing of plants, botanic gardens can act as a metaphor for the complex relationships that humanity has with the environment" (Sanders 2007:1213).

In theory, botanic gardens are the places where the most opportunities exist for truly making a difference – be it through science and research or through changing peoples' attitudes and behaviour – in the way society participates in and contributes to the fight against one of the biggest problems internationally: loss of natural resources which are vital to our existence.

Thus, in practice, the design of botanic gardens needs to focus very specifically on the plants themselves and the way that visitors experience the plants. The way in which the plants and the landscape (as representations of natural resources in general) are presented and experienced, is crucial to visitors' interpretation of the message being conveyed, their perception of nature, as well as their response to what they've experienced.

This thesis will explore conceptual and tangible ways to enhance the way visitors experience plants, and landscapes in general, by looking at current theory in landscape architecture and applying it to the design of a specific botanical garden in the South African context. The first chapter introduces the problem, the proposed site, and the focus of the dissertation.

1.3 Problem in context

Landscape design has evolved over the centuries out of man's attitude towards nature as well as the social, economic and environmental conditions during each era. Historically, the design of botanical gardens was also directly linked to this development throughout the ages. The current approach to landscape design comes down to ecological design that is sustainable, where the landscape is used as a tool to "fix" our broken environment. Designs have evolved for the better, reacting to natural processes that influence the landscape and recreating the way nature performs. Although this approach is very viable, there is still this notion of man having control over the way landscapes perform. It is also common in traditional botanical gardens to have this same approach of control over the garden through the way it is designed, limiting the potential performance of nature as well as the potential for people to interact with it. This becomes clear in the way plants are presented to visitors. In a recent study on botanic gardens and their role in society, Dodd and Jones (2010) suggest that the reason for this is that the design of most botanic gardens tends to be very formal, laid out in particular ways with plant beds and glasshouses, being places where active exploration is largely frowned upon. The designers of botanic gardens tend to be more inward looking and "purist" in their way of thinking, with plant collections being so intrinsically important that their purpose is existence only and does not have to be justified through social benefits by using the garden to connect with society, convey a message, or provide an overall experience. The manner in which traditional botanic gardens deal with restoring people's relationships with plants is mostly passive: it is believed that merely bringing people into contact with plants will make them find something special about them, despite the lack of evidence that this approach is viable (Dodd & Jones 2010). A selected few contemporary botanic gardens represent strong values and missions that

are becoming more community focused, enabling science and art to work together in order to enrich the visitor's experience, depicting climate change as a social concern, and conveying an overall desire to make a difference in the world.

In this dissertation the author will strive to investigate the relationship between people and plants, as well as between people and the landscape, within botanical gardens, without limiting the potential of nature to perform in its own unique way. This will be done firstly through looking at current theories in the landscape architectural profession on how to design with change as the medium, and secondly to find inspiration in designing the change and movement of a living entity (nature) and guiding this performance through another performance art: dance.

This should, in turn, challenge the way we interact with nature in botanic gardens in order to restore the interrelationships among plants, animals and humans, and clearly communicate to the audience the fact that nature is alive, flexible and changing. It should also show that nature shouldn't be subjected to full control, and that this flexibility of nature is one of its greatest assets.

1.4 Site location

The study area is situated eight kilometres east of the Central Business District (CBD) of Pretoria and within the City of Tshwane Metropolitan Municipality. The Pretoria National Botanical Gardens (NBG) is the proposed site where the design intent of this dissertation will be tested.

1.5 Problem statement

The Pretoria NBG represents a “purist” traditional approach to botanical garden landscape design, where the emphasis is on plant collections within a recreational

park facility rather than on a unified design that focuses on the way the visitor experiences nature and the message conveyed by this experience. The fact that the NBG functions mostly as a recreational park has shifted the focus of the gardens from nature to humans. Although there are plant collections and theme gardens with a variety of plant species on display, these are disconnected from the rest of the garden and focus merely on the existence of these precious, manicured plant collections and ignore the garden's lack of experiential quality. This is a representation of the broken relationship between man and plants. The plants on display are limited to plant beds and do not allow for species to interact with each other intuitively, but are subjected to the control of man. This also largely discourages the interaction of man with nature, a relationship which contemporary botanic gardens strive to rekindle. The main problem that will be focused on in this dissertation is the habit of landscape architects to take control over nature. This control limits the potential of nature to grow intuitively as the living, changing, dynamic entity that it is and to perform in a way that transcends the current design conditions within the Pretoria National Botanical Gardens. This situation will be investigated throughout the dissertation.

1.6 Hypothesis

How can a landscape architect use change as a medium for designing a botanical garden while allowing nature to perform, without limiting the potential of the performer to transcend conditions, and at the same time encouraging human-plant interaction?

By using change as a medium to design a landscape that allows the maximum performance of nature, the botanical garden will be enabled to provide an experience of nature to visitors that will give them an understanding and appreciation of nature and their environment on a level that is not currently existing in the Pretoria NBG. The NBG will be able to engage with ecological design in a way that would give

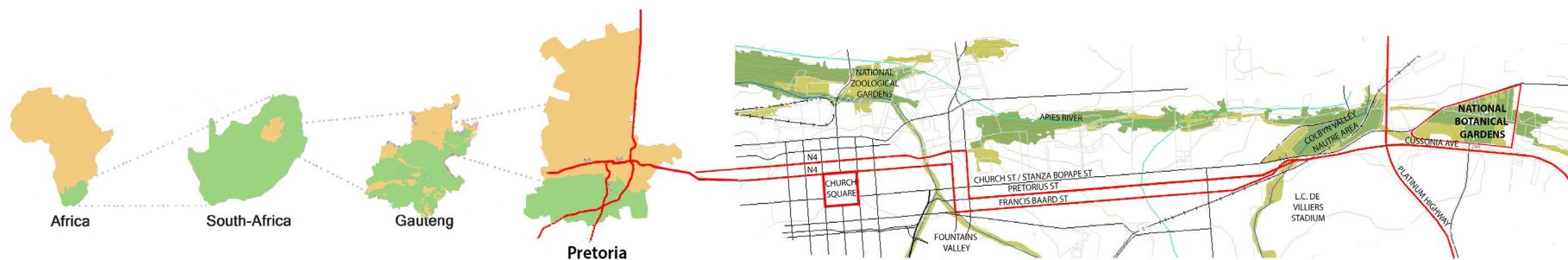


Fig 1.1: Pretoria NBG Site Location (Author 2015)

nature the freedom that it asks for to grow and evolve intuitively, without disguising the fact that it is a designed and constructed landscape. The representation of nature will encourage exploration and invoke a new appreciation for the landscape in visitors, who will be inspired by dance performance. By using dance performance to inform the way we represent nature and guide a living being that cannot be subjected to full control, a design will emerge that allows for change in the landscape. The way this change is presented will excite, educate and engage the visitor in the beauty of the landscape.

1.7 Research questions

- How can change be used as a medium to design landscapes?
- How can performance principles be utilised to inform landscape design in botanical gardens?
- How can the presentation of nature be designed to re-establish the relationship between people and plants?
- How can landscape architects represent nature in a way that does not limit change to predefined shapes on a plan?

1.8 Aims and objectives

The aim with this dissertation is to answer the abovementioned questions and challenge the “purist” as well as some contemporary design principles of botanical gardens in order to:

- Argue that our attitudes towards nature throughout time have led to landscape analogies which influenced the way we design landscapes, and that our current attitude requires a new analogy which we can engage with in the design of nature: landscape as performance.
- Engage with dance performance principles, and especially the relationship between the performance and the audience, as a tool to inform landscape design.
- Engage with dance performance principles to determine how to guide the performance of a performer that can't and should not be subjected to full control.
- Demonstrate the changes that occur in nature through the way we design the landscape by moving away from traditional ways of representation.
- Determine whether the education that themed plant collections in a botanical garden aim for, can occur through experience and encouraged exploration of the garden rather than through the use of information boards.

1.9 Research methodology

1.9.1 Empirical research:

- Analysis of the current conditions in the NBG will be done in terms of its performative qualities and the experience provided for the audience.
- Current site problems, opportunities, brief interviews and client proposals will be used as conductive material.
- Site conditions that reveal elements of the regional landscape will be mapped and will become design informants.

1.9.2 Theoretical research:

Historical overview:

- An analysis of the history of botanic gardens in order to gain an in-depth understanding of what they consist of, how they have developed, and why this study is significant;
- Comparison of the development of landscape architecture with the development of botanic gardens to see if they relate and how;
- An analysis of the evolution of dance performance in order to see if and how it relates to the author's approach to landscape design, and also to see which type of dance can be analysed to inform her on how to design landscapes.

Literature review:

- Theoretical analysis of the norms of and deficiencies in botanical garden design.
- Investigation of landscape architecture theories and principles as a basis for informing spatial quality, the form generation process, and how to design ecologically.
- Analysis of dance performance art and how this could influence landscape design.

Case studies:

- International contemporary botanical gardens
- Local botanical gardens
- Performative landscape designs

1.10 Assumptions and delimitations:

In this dissertation it will not be attempted to redesign the full extent of the botanical garden, but the focus will rather be on an area identified within the NBG that has the most potential for development and exploration of the ideas mentioned above.