

BRIEF DOCUMENT

RELATE

ENHANCE

ACTIVE CENTRE

1: Briefing document

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1.1 Introduction

At the southern tip of Pretoria, a green belt system of protected natural vegetation forms a 'gateway' to Pretoria's Central Business District.¹ These green open spaces allow city dwellers the opportunity to experience the region's diverse fauna and flora within a few minutes' drive from where they live and work. Moreover, this part of Pretoria has a particularly rich cultural heritage; a number of monuments and artefacts in the area have made it a popular tourist destination. The Voortrekker Monument,² (Figures 2, 3), Fort Klapperkop,³ and Fort Schanskop are nearby monuments that are visited frequently.

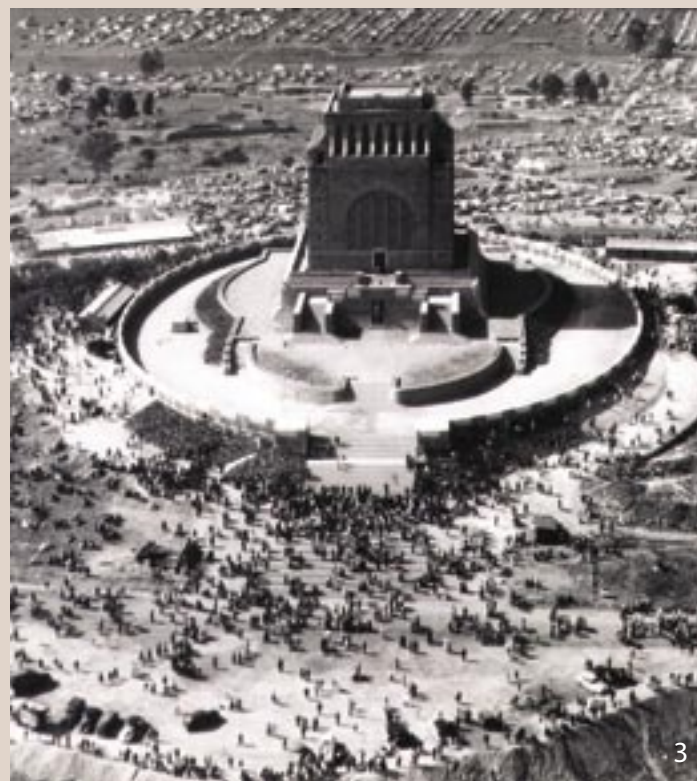
Between Monument Hill and Fort Klapperkop (Figure 1) lies the Fountains Valley, named after the two fountains that supplied Pretoria's water from as early as the latter part of the nineteenth century. To re-introduce the indigenous animals and exotic plant life that made this area so attractive to early settlers, the southern part (the red area shown in Figure 1) of Fountains Valley was declared a protected area in the late 1800s. This protected area is today known as the Groenkloof Nature Reserve (GNR) and it forms the macro site where this project is based.

The potential of Groenkloof Nature Reserve is currently under-realised by its user-group and by those who manage it from within the Tshwane Metro Municipality. Apart from its recreational uses, it could also play an important role in educating the youth of Pretoria about conservation. Such an endeavour could become an essential component in the continued existence of the natural environment and animal life close to our cities.

The dawning of the 20th century saw a shift of the collective consciousness worldwide, a determination to conserve the earth's natural and cultural heritage resources for future generations. South Africa's architecture and design industry, always slow to adapt to change, has only experienced this shift since the end of the apartheid era. This new approach is evident in the topics of discussion (see for example 'Responsible and relevant architecture', in *Opportunities for Relevance* by Marschall and Kearney: 2000), the widening

Figure 1: Map of southern Pretoria showing the macro site and surrounding natural areas

Figures 2 & 3: The Voortrekker Monument, located near the Interactive Centre, embodies the heritage of Afrikaner nationalism





range of materials and recyclable products used, as well as in recent projects such as Blue IQ's development of world heritage sites (cf. 3.1).

The chosen site within the GNR (Figure 1) is an ideal setting to study the effects of combining synthetic artefacts with a natural environment. The GNR attracts crowds of active young cyclists and groups of schoolchildren annually, which makes for an educated, enthusiastic target group in which to cultivate awareness. The *Interactive Centre* is a design proposal that show-cases the research undertaken. The purpose of the project is to explore a design that enhances the city-dweller's awareness and appreciation of a unique natural resource: Groenkloof Nature Reserve. The dynamics of this project lie in the juxtaposition of perceptions, styles and functions. Eco-friendly design and sports-design are combined to good effect, while conventional architecture is offset against new technology. In addition, the GNR as a whole is juxtaposed with the Pretoria CBD. The research and design of this project aim to prove that through design, contrasting elements can facilitate interaction between man and nature.



1.2 A real world problem

'The simple truism
that we will never conserve what we do not love
and that we will not love what we don't
understand,
and that we won't understand what we have not
been taught,
is as true today as it was decades ago ...'

Ian MacDonald, CEO of the World Wide Fund
for Nature (www.deltaenviro.org.za)

The past century has seen the vast expansion of metropolitan areas worldwide and as a result, green open space in urban areas has diminished. While most city-dwellers only experience urban living, the need for a place of 'escape', to reverse the negative stimulation of the city, is always present. At the heart of this is the primitive desire for people to connect with nature. To satisfy this need, modern technology offers various avenues of escape such as television (Figure 4), animated games (Figure 5) and virtual imagery

provided in the interiors of buildings (Figures 6, 7). In this way, technology can replace some of nature's roles where no natural resources are available. These developments are especially helpful in a country like Japan where a high population density makes for a stressed and often poor quality of life.

In a country such as South Africa which is far less developed, technology serves a different purpose. Parents and teachers view television programmes and games as edutainment, thus justifying them as an effective tool to educate the youth. However, it is clear that this should not be the only means to teach the public of the wonders of nature. Digital representations pale in comparison to the personal experience of being at one with nature and among animals in their natural habitat.

The public needs to be made aware of how precious our green open spaces are. An educational centre such as the proposed *Interactive Centre*⁴ is a contribution to this endeavour as it combines nature and technology to encourage awareness of a unique natural area. The Centre uses design principles to relate our city-environment to the surrounding natural setting. The Centre does not aim to find a solution to other international environmental concerns; its design is a site-specific investigation into facilitating interaction between the city-dweller and the nearby natural environment.

1.3 Problem statement

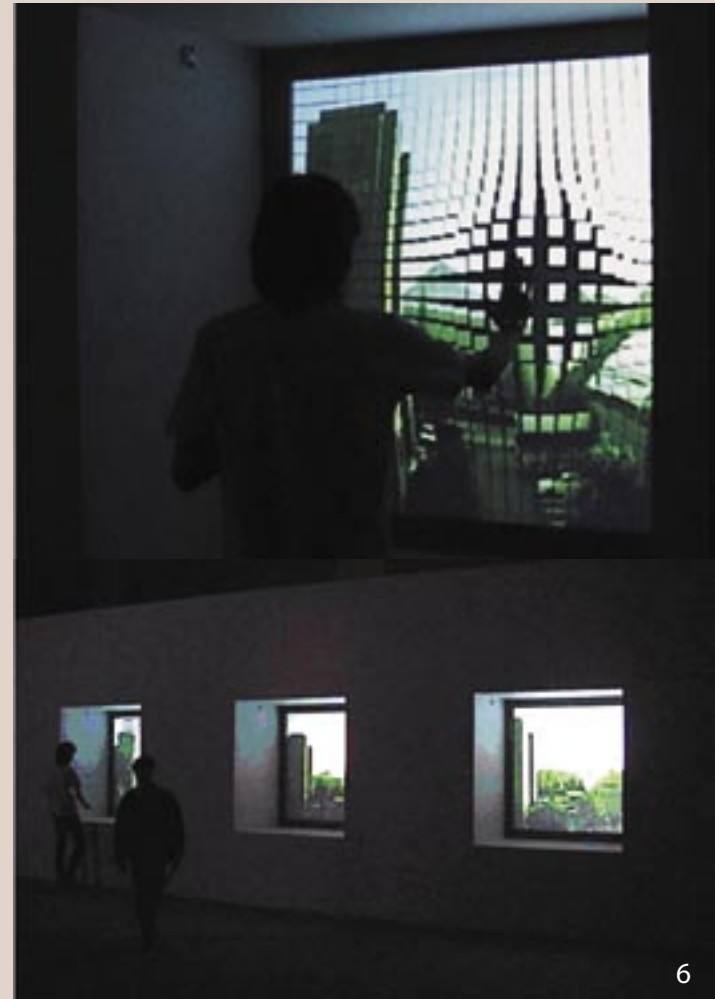
In line with international concerns for conservation (cf. 1.2), this project addresses the physical and design constraints of the chosen site. These constraints were identified after studying the site, conducting interviews with the users

Figure 4: The Discovery Channel website with information on television programmes dealing with environmental issues

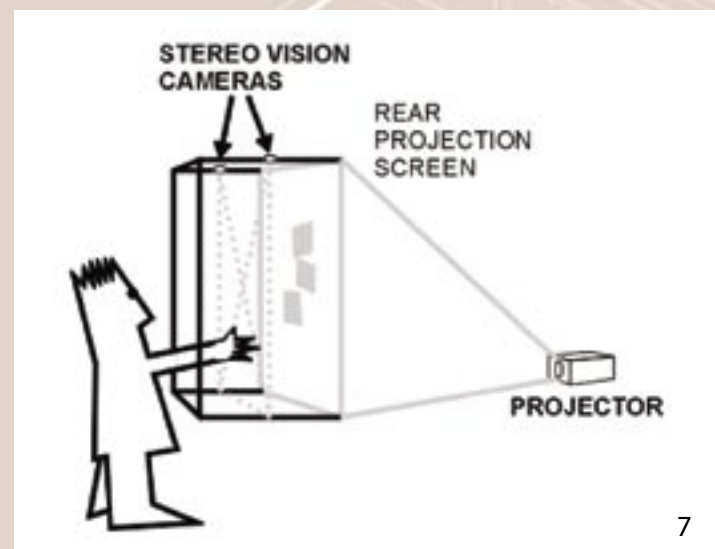
Figure 5: The Namco Playstation game, 'Soul Calibur', in which the user is involved as an action figure that explores super-real animations of ancient lands

Figure 6: The Extruded Window project at an exhibition hall of the Softopia Japan Centre in Gifu

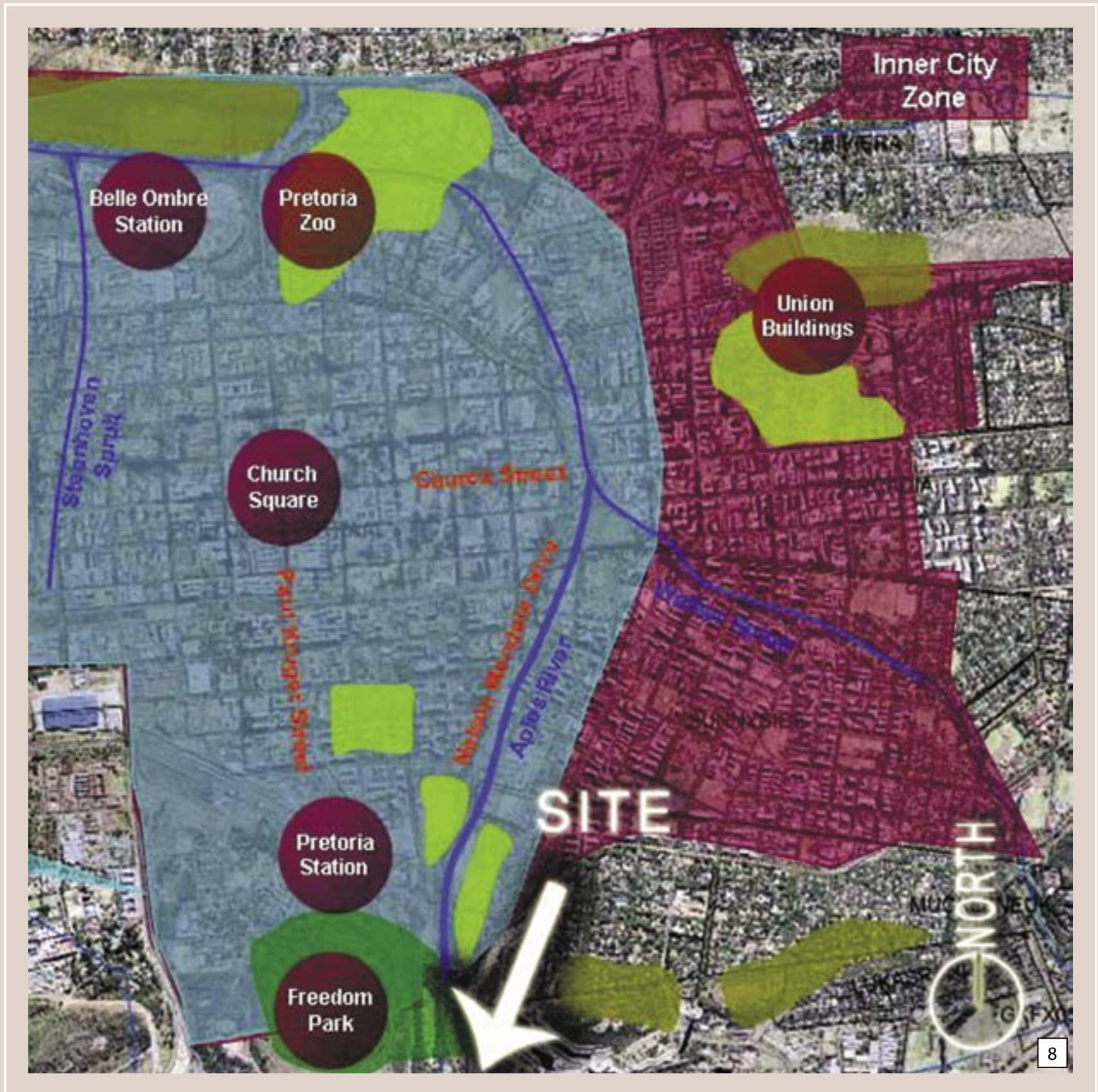
Figure 7: Cameras capturing the real image which is then projected onto screens to create the 'extruded windows' effect



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and managers of the GNR, and collecting information on similar design projects both nationally and internationally (cf. 3.1-3.5).

1.3.1 PHYSICAL CONSTRAINTS

1.3.1.1 *The character of the GNR sets limitations such as the need to consider the sensitive fauna and flora*

1.3.1.2 *The public of Pretoria is under-utilising the GNR's recreational facilities seeing that the reserve has no marketing strategy in place.*

1.3.1.3 *The GNR, managed by the National Parks Board, is a non-profit organisation, thus the funding depends on the backing of the community and sponsors.*

1.3.2 DESIGN CONSTRAINTS

1.3.2.1 *The Interactive Centre is a project from inception, and the new functions of the Centre have to be suitably integrated with the existing infrastructures and design-ethos.*

1.3.2.2 *The challenge is to prove that through design, the user can feel a part of his/ her surroundings. This in turn will*

make the user relate to and interact with the landscape. Ultimately, this interaction must lead to educating the user about conservation.

1.3.2.3 *The Interactive Centre will be used by mountain bikers, hikers, learners and families alike, therefore the design must acknowledge the unique combination of ecological design as well as sports design.*

1.4 Project brief

The macro project

The City of Tshwane Metro Municipality plans to develop the green open spaces, including both the Groenkloof Nature Reserve and Fountains Valley, as the southern gateway to Pretoria CBD. This is in accordance with the *Tshwane Inner City Development and Regeneration Strategy*, a document that was compiled by the Municipality in 2005 to 'lay the foundation for the repositioning and regeneration of the Tshwane Inner City' (2005:4).

In the *Tshwane Inner City Development and Regeneration Strategy* (2005:16), it is argued that there is a need to establish the GNR as a sought-after destination within the southern gateway to Pretoria CBD. The Municipality sees the project of developing the area as an investment in the wildlife and habitat conservation of the protected green strip that also includes Klapperkop and Salvokop (Figures 9, 10). Part of the ambitious Tshwane strategy is to link these 'significant

Figure 8: A map of Pretoria CBD to define the focus areas of the Tshwane Inner City Development and Regeneration Strategy, edited to show the location of Groenkloof Nature Reserve

Figure 9: The Tshwane Regeneration Strategy's building block 1 is 'Defining the gateways' (p.17) to Pretoria CBD. Main gateway shown is the southern gateway, where Groenkloof Nature Reserve is located

Figure 10: Maps of Pretoria CBD to illustrate the southern gateway, and how the green open areas are linked



green open spaces in an impressive natural setting' within the next ten years (2005:16). According to David Boshoff, the GNR is to be linked with Klapperkop and Monument Hill by easily accessible underground tunnels, creating one great reserve. Apart from conserving natural and cultural heritage resources, the project serves as a possible income generator and a job creation prospect for veld guides, artisans, and various entrepreneurs. By empowering the community throughout the process of the project, the *Interactive* Centre becomes self-sustaining in each phase of its development.

1.5 The client brief

The micro project

The brief is to design and develop a visitors' educational centre in accordance with the requirements of the GNR management and the Tshwane Metro Municipality. The Centre will be a point of orientation and provide visitors with after-cycling/ hiking activities and services. As part of the proposal, provision must also be made for the larger GNR (including game viewing areas) to optimise the potential of the GNR's resources.

The existing structures on the chosen site should be used as extensively as possible, as indigenous knowledge is vital in preserving the memory of the historical relevance of the area. In addition, all new proposals for the development of the Centre as well as the larger reserve must respond to the ecology in a manner that supports conservation of the natural and historic resources of the GNR.

The Centre is to have the following facilities:

1.5.1 INFORMATION SERVICES:

These include an educational exhibition and an information 'front' desk where visitors will be provided with brochures on the various trails. A veld guide will also be available for groups of learners.

1.5.2 RESTROOMS AND SHOWER FACILITIES:

Existing amenities will have to be upgraded and extended where necessary.

1.5.3 LECTURING FACILITIES:

Facilities will be made available for formal and informal lectures, as well as gatherings/ meetings held by mountain bikers and the GNR staff. The provision of office space is optional.

1.5.4 RECREATIONAL FACILITIES:

These include income-generating initiatives that will provide a supplementary income for the Centre. A refreshment stall and small curio shop could provide after-cycling/ hiking services and activities.

1.6 The site selection

Site within the GNR

A study of the existing architecture within the GNR reveals that most of the buildings comprise conventional steel, brick or wooden-pole construction and that the only building of some historic and aesthetic value is a brick structure currently functioning as an overnight shelter (Figure 15: A, B). In this vicinity there is a degree of infrastructure, as opposed to the other buildings on the GNR that are in isolated parts of the reserve.

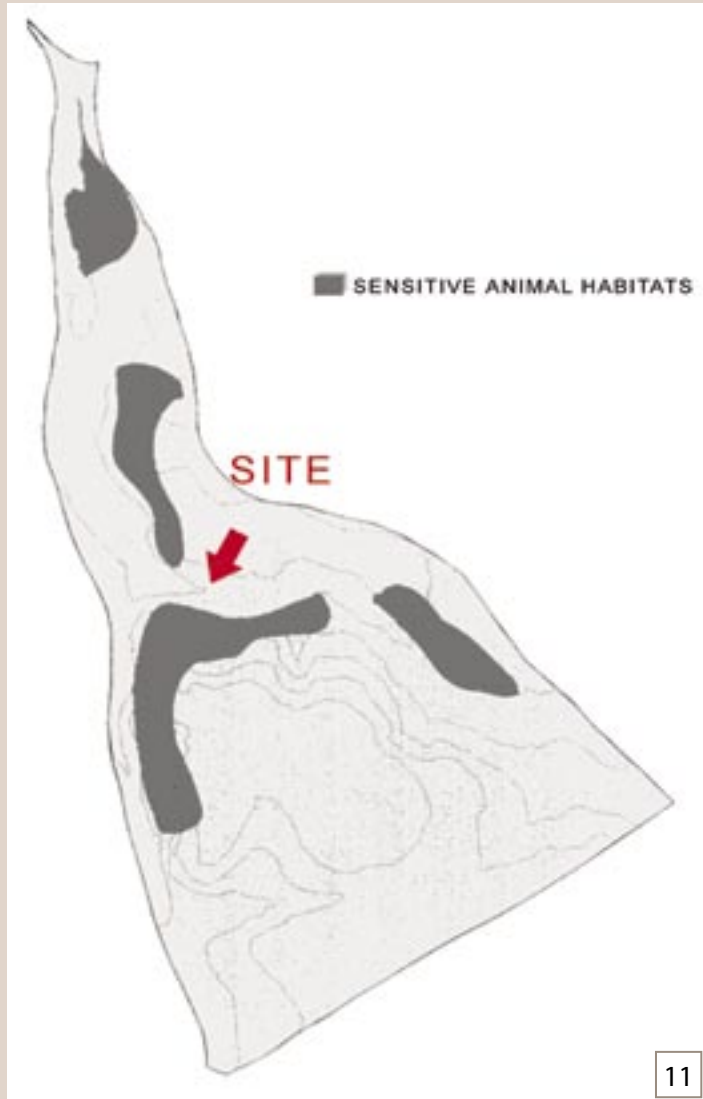
The appointed site is located in the southern part of the GNR (Figure 15). It currently serves as a recreational point where visitors meet before they hike, cycle or overnight at the Groenkloof Nature Reserve. The administration and managerial staff are located on the premises (Figure 15: marked B). The process of selecting an appropriate site within the GNR involved a study of the existing architecture, landscape, and the needs of the users (cf. 2.2 - 2.4).

Figure 11: Results of a study to identify sensitive animal habitats in the Groenkloof Nature Reserve

Figure 12: The face-brick building that currently functions as an overnight hut

Figure 13: Cyclists leaving through the secondary gate

Figure 14: View as one enters through the main gate upon arrival at the site





The landscape study revealed that the same area mentioned in the architectural study (Figure 15) is where most of the indigenous plant growth has been destroyed due to human and vehicle traffic. It is a 'disturbed grassveld' (Figure 11) landscape. This area is located opposite the overnight hut and is the point of arrival and departure for all the cycling, hiking and 4x4 trails (Figure 15: marked C). There are also two beautiful views to the south from this particular point (Figure 15: marked X).

A study of the users' needs (cf. 2.1) indicated that the facilities required in the proposed Centre would have an educational and recreational role to play within the GNR. This means that the location of the chosen site must be where visitors are most likely to need amenities and other facilities. The site also has to be visually attractive to create a lasting impression of the GNR.

To summarise the findings of the research done, the location of the proposed Interactive Centre should be in the area where:

- an intervention will have the minimal negative effect on the indigenous plant species
- movement of visitors to the GNR is highly concentrated
- the *Interactive Centre* is most likely to act as an enabler for visitors e.g. facilities for the cyclists and hikers before they commence their trails and upon arrival
- visitors are able to enjoy beautiful vistas of the surrounding area

Other factors that influenced the final decision on the location of the site, were the safety factor (the site is secured by a guarded entrance as well as wildlife fencing all along the perimeter) and the position of other buildings on the site (walking distance from the Youth Camp and the managerial offices marked B).

Figure 15: Diagrammatic map of the selected site to show existing functions

1.7 Design approach

'To dwell

between heaven and earth means to settle in the multifarious in-between

that is, to concretize the general situation as a man-made place ...

a study of man-made place therefore ought to have a natural basis:

it should take the relationship to the natural environment as its point of departure.'

(Norberg-Schultz 1979:50)

In order to design a visitors centre within the given physical and design limitations (cf. 1.3) it is necessary to establish a framework on which to base decisions. The design philosophy, in other words, is shaped by the specific implications of the project and must respond directly to its context or site.

1.7.1 CONTEXTUALISM

The architect Jacques Blondel laid the foundations for a theoretical architectural trend known as contextualism. Blondel claims that '... architecture should be apprehended in its total setting or context ... contextualism bridges the gap between artistic feelings and human qualities and needs' (Lesnikowski: 1982, 49). This implies that a man-made artefact necessarily becomes an inseparable part of its surroundings and in responding to the context, the designed artefact responds to the needs of the users. This concept leads to the argument that interior architecture is an inseparable part of the 'total setting or context'. The Interior Architect focuses on problems pertaining to the function and quality of the interior environment (IFI General Assembly 1983) and of the intimate environment of a user (termed *human space* in this document). According to Kurtich and Eakin, quoted by Hildebrandt in *Design Intelligence* (2004:4), 'Often Interior Architecture is applied to the inside of a building as design elements that are carried to the exterior, establishing a holistic creation'. Interior architecture thus ensures that the interior environment relates harmoniously with the exterior environment, which makes for a building that responds in its totality to the context. The diagram (Figure 16) illustrates the



16

areas in which *human space* (definition cf. B) interacts with the environment. John Dewey is of the opinion that to be human is already to be interacting, to be having experiences (Hook: 1995, 217).

1.7.2 DESIGN GUIDELINES

The primary aim of the *Interactive Centre* is to promote the education and awareness of conservation in the proximity of a city-context. The building and landscape development should enhance this central theme and visually communicate the Centre as an adventure-sport and eco-tourist facility. The design method is divided under two imperatives: to *Relate* and to *Enhance*. These two words encapsulate the guidelines for decision-making throughout the design process.

1.7.2.1 *The need to relate*

The interior, exterior and landscape architecture must all relate to the surroundings both physically and functionally.

Physical attributes

The physical attributes of the architecture comprise the materials and technology used in the Centre and the way in which these relate to the natural area. The materials used throughout the Centre are designed to relate visually to the surroundings by responding to the historical relevance and indigenous knowledge imbedded in the GNR. A building does not necessarily need to imitate nature in order to co-exist in a natural environment. The architecture should be honest in the materials used. In addition, as the Centre is a responsible and responsive design intervention, it should tread sensitively on its natural context, both aesthetically and ecologically.

Functional attributes

For the Centre to relate to its surroundings through its functional attributes, the activities and facilities should consider the needs of the focus user groups (cf. 2.1).

The centre must thus take into account:

- Eco-tourism and the needs of eco-tourists.
- The unique diversity of users at the GNR, including the sports enthusiasts.

Figure 16: Human space connects with context by means of design

- The facilities needed by cyclists and hikers when they return to the Centre.
- The main educational theme of the Centre.
- The proximity of the Pretoria CBD.

1.7.2.2 *The need to enhance*

While relating to its environment, the design method must also be aimed at enhancing and complementing the site, through its tangible and intangible attributes.

Tangible attributes

The existing structures on the site should be enhanced by using appropriate new architectural ‘add-ons’ to the old structures. The visual impression of the Centre should communicate an architectural intervention that complements the general style that already exists in the GNR. The design should therefore take cognisance of the indigenous knowledge of the area. The project includes various contrasting factors such as the new architecture that plays off against the natural background. By juxtaposing (definition cf. B) the contrasting elements with one another, a dynamic visual interplay is established: new and old, conventional and modern, and natural against synthetic.

To enhance the natural environment, the Centre should integrate the unique beauty of the flora of GNR into the project’s landscape development. The re-introduction of indigenous plant species to the chosen site (which is disturbed grassland) will enhance the ecosystem of the GNR.

Intangible attributes

Glen Murcutt addresses the proposition that ‘...architecture – built form – can act as cultural repository, triggering and enhancing awareness of local identity’ (Beck and Cooper 2002:30), a statement that indicates the possible intangible result of a synthetic artefact. By being aware, throughout the design process, of the intangible factors inherent in

the Centre, the final product will respond to the users’ perceptions of an educational visitors centre. The way in which the public currently perceives the GNR is a factor of which the Centre should take note. It is difficult to define such perceptions because they are intangible and involve the subjective opinions of individuals. Conducting research by means of interviews with frequent visitors to the GNR is useful in order to define the main perceptions of the reserve.

To summarise the design approach as defined in areas of knowledge, the fields covered in this project are:

- Human space and design requirements as determined by function and the interface where human space encounters a natural environment (Figure 16).
- Adventure sports and eco-tourism.
- Contemporary design approaches to working with historical exhibitions, focusing on education and awareness of the site while enhancing the experience of the spaces through systems and technology.

End notes

1 Hereafter, throughout this document, the Pretoria Central Business District is referred to as the Pretoria CBD.

2 The Voortrekker Monument is located on Monument Hill, Pretoria. It was built to commemorate the Great Trek and was inaugurated in December 1949.

3 The government of the old Zuid-Afrikaansche Republiek built a ring of forts, including Fort Klapperkop around the town in 1898. They were intended to defend Pretoria in the Anglo-Boer War (South African War) but the town was not defended and no shot was ever fired from the forts. Fort Klapperkop now displays armaments and military vehicles used during the war.

4 Hereafter, throughout this document, the word Centre is used to denote the *Interactive Visitors Centre*.