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_**PRETORIA STATION PRECINCT** & COMMUNITY DEVELOPMENT CENTRE

PRESENTED BY

Submitted as part of the requirements for the Degree of Magister in Architecture (Professional) in the Faculty of Engineering, the Built Environment and Information Technology

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Dedicated to my beautiful beautiful, Marcelle



The vision for the City of Tshwane is to be:

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" The leading international African city of excellence, that empowers the community to prosper in a safe and healthy environment (GAUTRAIN: Pretoria SDF_ OCT 2003)



Aerial photograph of the Pretoria CBD (Capitol Consortium; 1999)

The Pretoria inner city is envisioned to embark on a major redevelopment era with the Pretoria ISDF (Integrated Spatial Development Framework) outlining specific areas to which these developments are proposed to take place. With the re-alignment of the proposed Gautrain Rapid Rail Link through part of the city, the Salvokop area to the south has been recognized as an important site to compliment the development of Freedom Park, and a Gautrain station has been proposed in close proximity to Pretoria Central Station. Here a mere pedestrian tunnel is envisaged to become the link between the two stations and that of Salvokop en route to Freedom Park and the area East of the historical Sir Herbert Baker-designed building has been earmarked as a parking reserve, whereas a great opportunity lies in creating a functional and meaningful space that could bring many aspects of urban form into play.



Figure showing alignment of the proposed Gautrain system tunnelled through Salvokop and the Pretoria Station Precinct

The great synergy embodied in the meeting of two railway stations as major areas of arrival and departure, passage of movement and opportunity for social interaction and gathering is extremely important in the urban landscape. This synergy needs to be embraced and can be harnessed in many forms within the city as is shown by numerous international examples such as Madison Square Gardens in New York City, the new Lehrter Stadt Bahnhoff in Berlin and even the Johannesburg Park Station to some extent. All these examples reflect how building forms serve as catalysts that enhance social, economic and cultural values, and through meaningful association the area between Pretoria Central Station and the Gautrain Station can become a successful urban place.

The proposed Pretoria Gautrain Station should not be seen in isolation, since it forms part of the historical Pretoria Station precinct, and its vital that it is integrated into the precinct from both a functional and spatial perspective. The interrelationship between the proposed Gautrain station, the latest Salvokop Vision (December 2003), the Freedom Park National Legacy project, and the historical Pretoria station along with the Paul Kruger Street spine towards Church Square, is of particular importance.

According to the Urban Design Framework of the Paul Kruger Street Spine prepared by the University of Pretoria (2000) the Pretoria Station precinct is "one of the most important public spaces in the city and its development can do much to enhance the image of the inner city".

This thesis investigates and develops an urban design framework for the Pretoria Station Precinct. This framework proposes the development of an inter-modal facility, with retail and commercial potentials, as well as the establishment of a community-based facility. The focus of this study aims to produce a suitable development that addresses the needs of the local community, whilst incorporating the principles of adaptability where building functions are designed to accept change and accomodate growth.







Freedom Park National Legacy Project







Major stakeholders who are directly involved with the development of the Pretoria Station Precinct are the following:

Intersite Property Management Services (on behalf of SARCC – South African Rail Commuter Corporation)

City of Tshwane Metropolitan Municipality City Planning Inner City Partnership Transportation Planning

Gautrain Project Team (on behalf of Department of Public Transport, Roads and works: Gauteng Province)

Freedom Park National Legacy Project (including Salvokop)

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FIG. 5.2.2.2 Bollards at Melrose Arch (Author; 2004) FIG. 5.2.2.3 Street signs at Melrose Arch (Author; 2004) FIG. 5.2.2.4 Sketch expressing visual connection.. (Author; 2004) FIG. 5.2.2.5 Route from Pretoria Station to Gautrain station..(Author; 2004) FIG. 5.2.2.6 Sketch expressing access through building (Author; 2004) FIG. 5.2.2.7 Sketch depicting clear visual connection from Pretoria Station to the Gautrain Station terminal (Author: 2004) FIG.5.2.3.1 Conceptual collage dspicting linkage and connectivity (Author; 2004) FIG. 5.2.3.2 Informing lines of connectivity (Author; 2004) FIG. 5.2.3.3 Sketch depicting important connections of the site (Author; 2004) FIG. 5.2.3.3 Sketch depicting important connections to the context (Author; 2004) FIG. 5.2.3.5 Sketch depicting anticipated lines of movement (Author; 2004) FIG. 5.2.3.6 Sketch depicting important pedestrian movement with proposed forms (Author; 2004) FIG. 5.2.3.7. Proposed private and public transport routes through the precinct (Author; 2004) FIG. 5.2.3.8 Diagram isolating the proposed private and public transport routes through the precinct (Author: 2004) FIG. 5.2.4.1 sketch illustrating how built forms are to address the street edge (Author; 2004) FIG. 5.2.4.2 Graphic depicting a retail edge (Author; 2004) FIG. 5.2.4.3 Graphic depicting an arcade typical to Pretoria (Author: 2004) FIG. 5.2.4.4 Colonade at the new DTI (Author; 2004) FIG. 5.2.4.5 Street edge address at the new DTI Campus (Author; 2004) FIG. 5.2.4.6 sketches illustrating how built forms are to address the street edge (Author; 2004) FIG. 5.2.4.7 sketch illustrating how colonades can be used at the street edge (Author; 2004) FIG. 5.2.5.1 Sketch showing creation of public square (Author; 2004) FIG. 5.2.5.2 Public square located at heart of scheme (Author; 2004) FIG. 5.2.5.3 Public square as form-giving element to the urban landscape environment (Author; 2004) FIG. 5.2.5.4 Existing rail on site (Author; 2004) FIG. 5.2.5.5 Trolly on site. This can be used by traders from the market area on site (Author; 2004) FIG. 5.2.5.6. Public square as an important orientation device (Author; 2004) FIG. 5.2.5.7 Graphic of a public open space (Author; 2004) FIG. 5.2.5.8 Graphic of a public square (Author; 2004) FIG. 5.2.6.1 - 6 Graphic sketches of historical buildings in the Pretoria Station Precinct (Author; 2004) FIG. 5.2.6.7 Sketches establishing important relationships and scales of the precinct (Author; 2004) FIG. 5.2.6.8 Sketch of precinct showing important historical connections and area of proposed development (Author; 2004) FIG. 5.2.6.9 - 10 Investigation of building scales in area (Author; 2004) FIG. 5.2.6.11 Establishing the street-edge elevation of the proposed development (Author; 2004) FIG. 5.2.7.1 The recently completed Lehrter Stadt Bahnhof in Berlin from the exterior (Author; 2002) FIG. 5.2.7.2 The recently completed Lehrter Stadt Bahnhof in Berlin from the interior (Author; 2002) FIG. 5.3.1.1 Functions of building giving form (Author; 2004) FIG. 5.3.1.2 concept model in plan (Author; 2004) FIG. 5.3.1.3 - 8 Photographs of conceptual model (Author; 2004) FIG. 5.3.1.9 Ground floor functions (Author: 2004) FIG. 5.3.1.10 First Floor functions(Author; 2004) FIG. 5.3.1.11 Second Floor functions (Author; 2004) FIG. 5.3.1.12 Third Floor functions (Author; 2004) FIG. 5.3.1.13 Shape of existing rail on site used as design influence (Author; 2004) FIG. 5.3.1.13 Shape of existing rail on site used as design influence (Author; 2004) FIG. 5.3.1.14 Surrounding landscape forms used to influence the design for the site (Author; 2004) FIG. 5.3.1.15 Eastern elevation of building showing locations of functions (Author; 2004)

FIG. 5.3.1.16 - 20 Images of second conceptual model (Author; 2004)

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FIG. 5.3.2.1 Eastern elevation of design proposal (Author; 2004)

FIG. 5.3.2.2 CSAR Chief Mechanical Engineers Office of 1909. (After Bakker; 2004)

FIG.5.3.2.3 Sketch of structural frame (Author; 2004)

FIG. 5.3.2.4 Northern section through building illustrating structural elements (Author; 2004)

FIG. 5.3.2.5 Wall textures at the new DTI Campus in Sunnyside, Pretoria: symbolism (Author; 2004)

FIG. 5.3.2.6 structural challenge of design (Author; 2004)

FIG.5.3.2.7 NZASM Apies River bridge on the Eastern Line east of Salvokop in De Jong et al, 1988 PG 114 (after Bakker; 2004)

FIG. 5.3.3.1 Diagram showing major movement to precinct (Author; 2004)

FIG. 5.3.3.2 Diagram showing movement patterns through and across the precinct (Author; 2004)

FIG. 5.3.3.3 Movement around and through building (Author; 2004)

FIG. 5.3.3.4 Movement through building (Author; 2004)

FIG. 5.3.4.1.0 sketches of east/ west facade design (Author; 2004)

FIG. 5.3.4.1.1 Northern section through building showing treatment to the East and West facades (Author; 2004)

FIG. 5.3.4.1.2 example of vertical louvres on the exterior of a building (source unknown)

FIG. 5.3.4.1.3 Enlargement of the East facade showing vertical louvres connected to a steel frame as a second skin (Author; 2004)

FIG. 5.3.4.1.4 Design sketches for climate control systems for building (Author; 2004)

FIG. 5.3.4.1.5 sketch through northern section (Author; 2004)

FIG. 5.3.4.1.6 Northern section of building showing the positioning and temperature gradient of the atrium (Author; 2004)

FIG. 5.3.4.1.7 interior atrium of Cape Town Convention Centre (Carter 2003)

FIG 5.3.4.1.8 Diagram represents the morning condition and functioning of the building in terms of thermal control strategies and influence of the atrium as an internal environment when the sun is exposed to the eastern facade (Author; 2004)

FIG 5.4.3.1.9 Diagram represents the afternoon condition and functioning of the building in terms of thermal control strategies and influence of the atrium as an internal environment when the sun is exposed to the western facade (Author; 2004)

FIG. 5.3.4.3.1 Northern Elevation showing structural system and ventilation stacks on western facade (Author; 2004)

FIG. 5.3.4.3.2 Ventilation Stack of the BRE Low Energy Building (White; 2000)

FIG. 5.3.4.4.1 Section and elevation of Atrium wall as a massing element to absorb thermal energy and act as a ventilator (Author; 2004)

FIG. 5.3.4.5.1 Chiller plant on roof of new Law Faculty, University of Pretoria (Author; 2004) FIG 5.3.4.5.2 Diagram represents the air-conditioning system (Author; 2004)

FIG. 5.3.4.6.1 Western section of roof structure showing how the design of the form acts as a natural ventilator (Author; 2004)

FIG. 5.3.4.6.2 Northern section through roof structure, also designed to act as a natural ventilator through its form (Author; 2004)

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CBD: Central Business District CSAR: Central South African Railways DTI: Department of Trade and Industry du/ha: Dwellings per hectare HIA: Heritage Impact Assessment ICOMOS: International Council on Monuments and Sites IDF: Inner city Development Framework ISDF: Integrated Spatial Development Framework JIA: Johannesburg International Airport SAR&H :South African Railways and Harbours **PSP:** Pretoria Station Precinct NZASM: Nederlansche Zuid Afrikaansche Spoorweg- Maatschappij SAHRA: South African Heritage Resources Agency SAR: South African Railways SARCC: South African Rail Commuter Corporation SATS: South African Transport Services UNESCO: United Nations Educational, Scientific, and Cultural Organisation ZAR: Zuid Afrikaansche Republiek