

01

1.1 INTRODUCTION

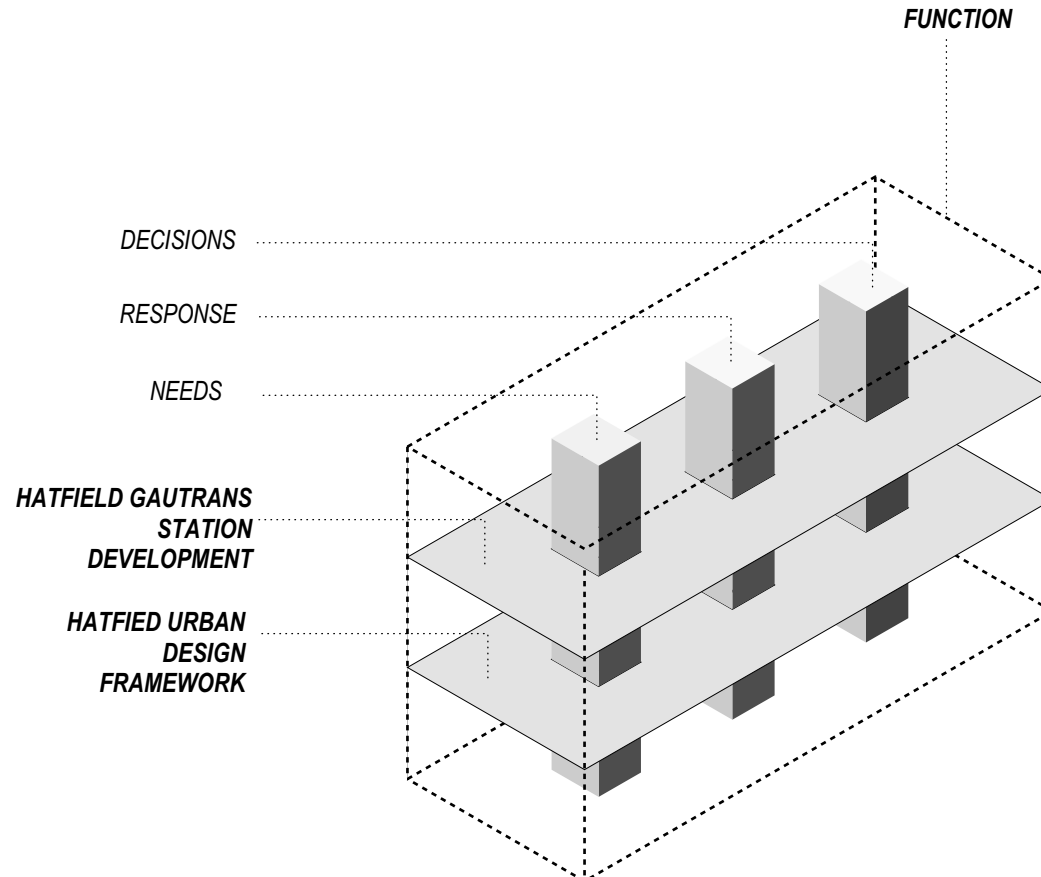
The project can be defined as a response to the immediate socio -economical needs as delineated in the *Hatfield Urban Design Framework* (Van der Westhuizen & Roccon, 2003) , and that of the proposed Hatfield Gautrans Station Development (HGSD). (Roccon, EB, 2003, MArch (Prof)). The project is therefore difficult to address through a conventional briefing document. This section will elaborate on the decisions that where taken to define the functions of the project.

1.2 VISION

The vision for the project is to establish a vibrant urban development while reacting to the needs of the local community and neighbouring projects. The development therefore forms a prototype of how urban developments could take place to count er unsustainable developments, such as urban sprawl and other practices, currently undermining the integrity of the built environment in South Africa.

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Project Overview



1.3 **CONTEXT**

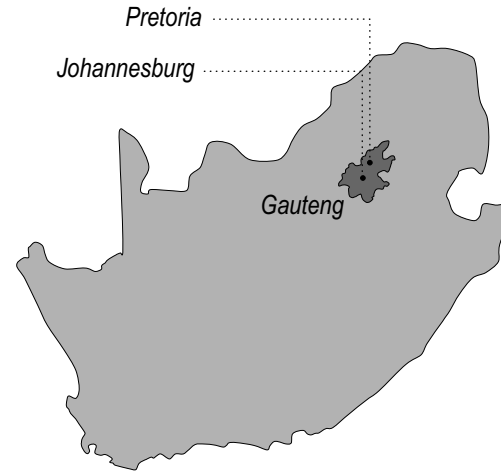
In a broader context, the development will take place in Pretoria, within Gauteng, one of nine provinces in South Africa. Many workers staying in Pretoria commute to Johannesburg daily, resulting in the need for a reliable public transport system between the two cities. The proposed Gautrans Rapid Rail Link, to be initiated by Blue IQ, an affiliation of the Gauteng Provincial Government, will address the commuter needs for many years to come. Construction of the rail link is planned to start in 2007.

This project proposal will be undertaken with the assumption that the rail line will be built, responding to the HGSD, as proposed by Bernard Roccon, (thesis proposal, MArch(Prof) 2003).

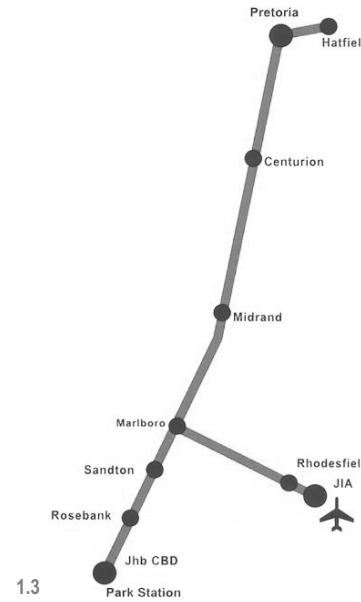
On a smaller scale, the development will take place in Hatfield, a suburb in Pretoria, home to mostly students and young professionals. Recent proliferation of commercial enterprises, such as motor show rooms, has started to diminish the residential character of this area. Some important spatial linkages to other functions, for instance the Hatfield Plaza Retail development, do exist, and will form part of the master plan for the development.

1.4 **LOCATION**

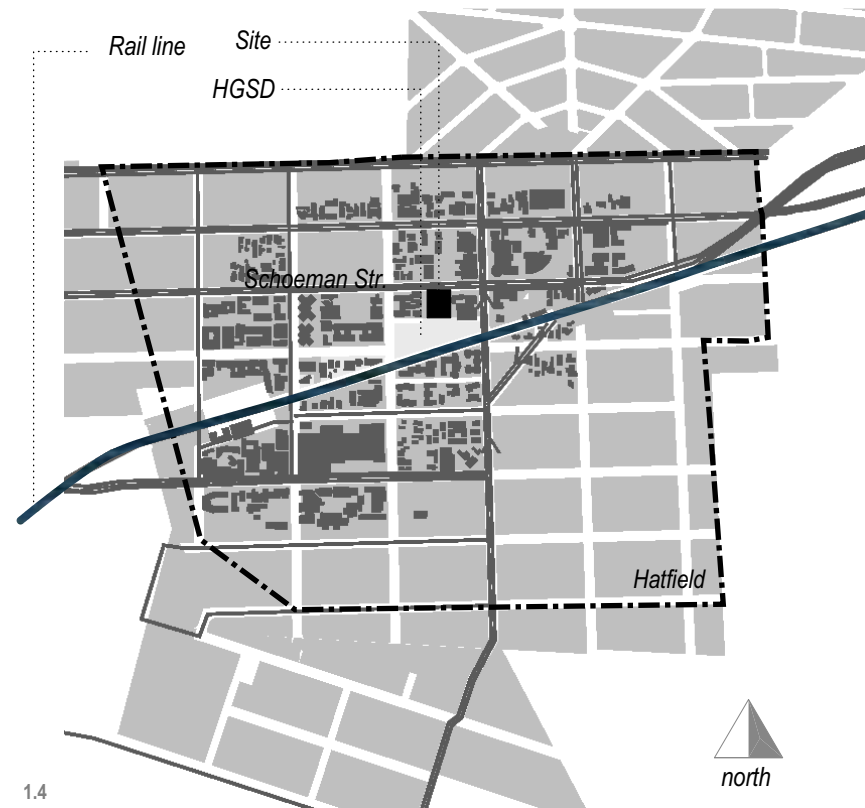
The project is located on erf 717, in Hatfield, between Schoeman street to the north and School street to the south. As a result of the adjacent HGSD, two road servitudes penetrate the site in the form of a shuttle road as well as a service road, also used for feeding the bus terminal.



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- 1.1 Diagram of programme generators.
- 1.2 Map of South Africa indicating Gauteng and Pretoria.
- 1.3 Gautrain Rapid Rail Link route and stations.
- 1.4 Hatfield, Pretoria.
- Following pages:
- 1.5 Context plan for proposed development.
- 1.6 Hatfield Gautrain Station Development Master Plan.

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SPRINGBOK PARK is in close proximity to the development to act as a **green open space** for recreational purposes

SCHOEMAN STREET one way west-east →

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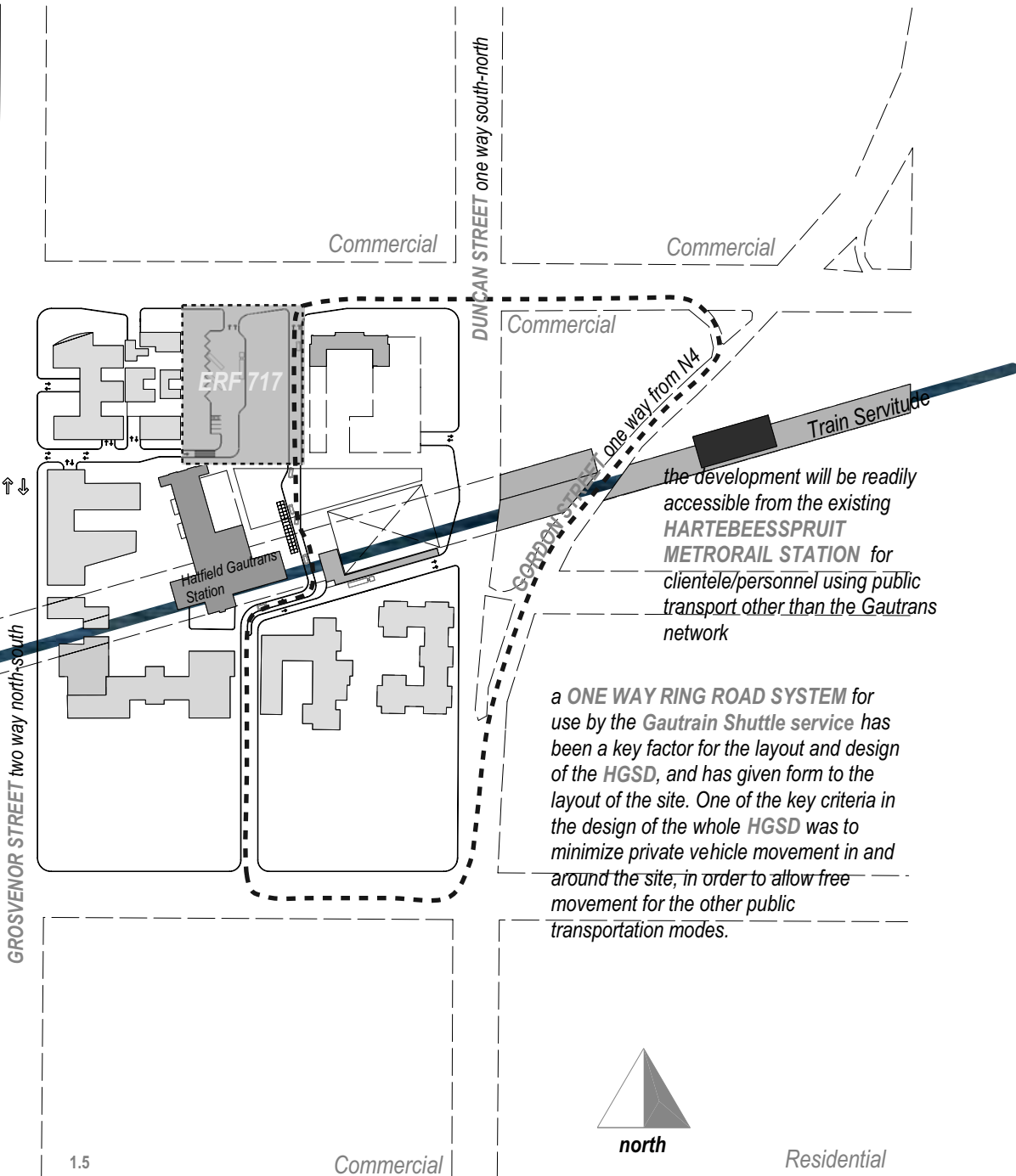
Office Park

ARCADIA STREET two way west-east

the area between Arcadia street and the rail lines has been designated for use as **CAR** facilities for the Hatfield Gautrans station.

Train Servitude

existing **commercial** and **retail** developments are located within 5 minutes walking distance in the form of **HATFIELD PLAZA** and **HATFIELD SQUARE**



Commercial

Commercial

Commercial

one way from N4

Train Servitude

the development will be readily accessible from the existing **HARTEBEESSPRUIT METRORAIL STATION** for clientele/personnel using public transport other than the Gautrans network

a **ONE WAY RING ROAD SYSTEM** for use by the **Gautrain Shuttle service** has been a key factor for the layout and design of the **HGSD**, and has given form to the layout of the site. One of the key criteria in the design of the whole **HGSD** was to minimize private vehicle movement in and around the site, in order to allow free movement for the other public transportation modes.

GROSVENOR STREET two way north-south

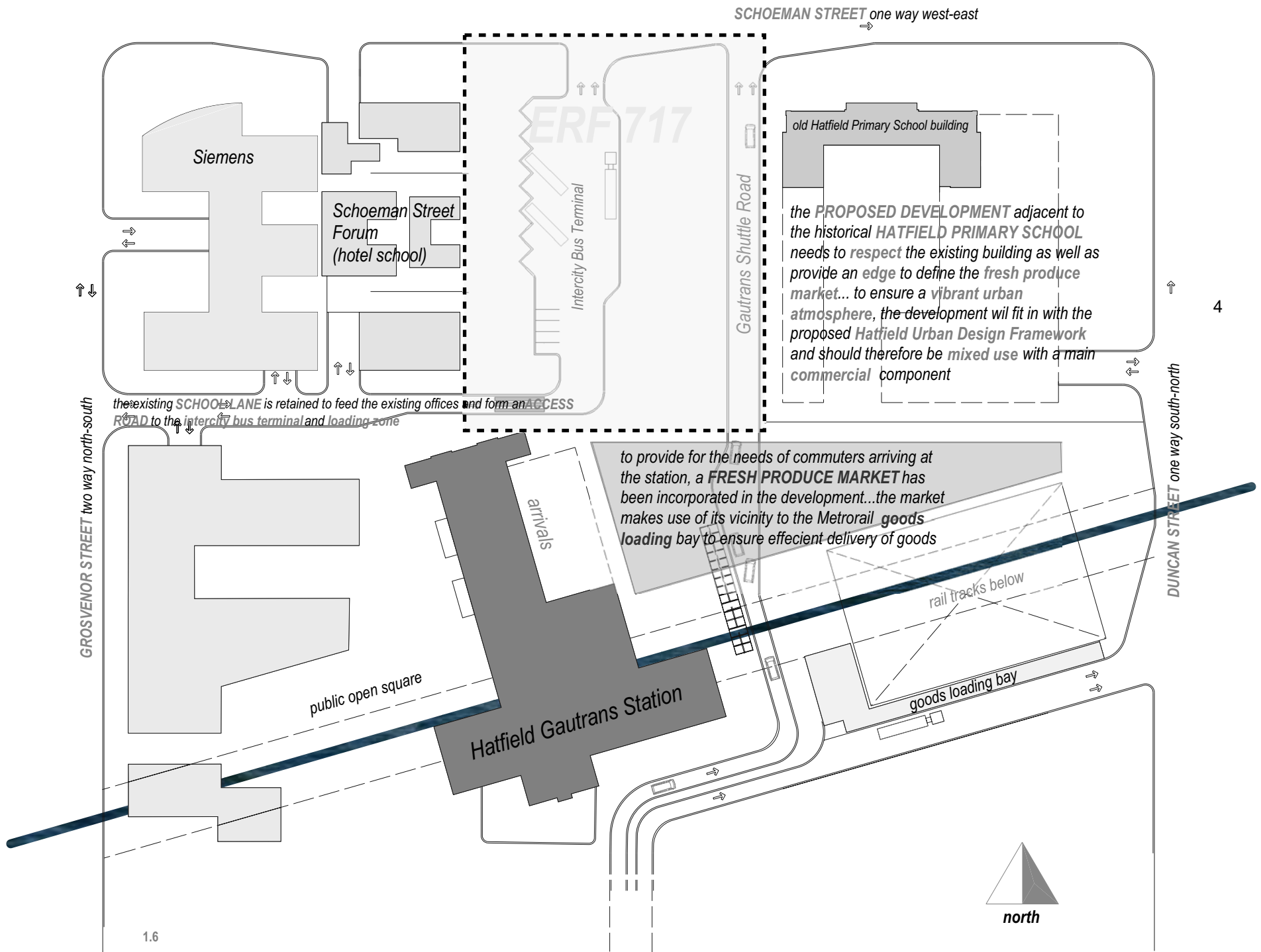
DUNCAN STREET one way south-north

1.5

Commercial



Residential



1.5 **SOCIO-ECONOMICAL NEEDS**

The project aims at ensuring a vibrant urban atmosphere in the modal transfer area. The following socio-economical needs of both the HGSD and the local community are addressed.

The HGSD's needs are:

- 24-hour activity to ensure active and passive security.
- An intercity bus terminal.
- A temporary storage, and loading facility forming part of the service road to service the development.
- Overnight accommodation for commuters and temporary workers.
- Police presence.

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Local Community's needs:

- According to the Hatfield Urban Design Framework (HUDF, 2003), a large part of the local community consists of students of various nearby institutions, including the University of Pretoria. Their needs in terms of a recruitment agency, as well as certain on-site jobs with flexible shifts, will be catered for.
- Hostel type accommodation for students.
- The creation of jobs and the promotion of work in a commuter and institutional zone.

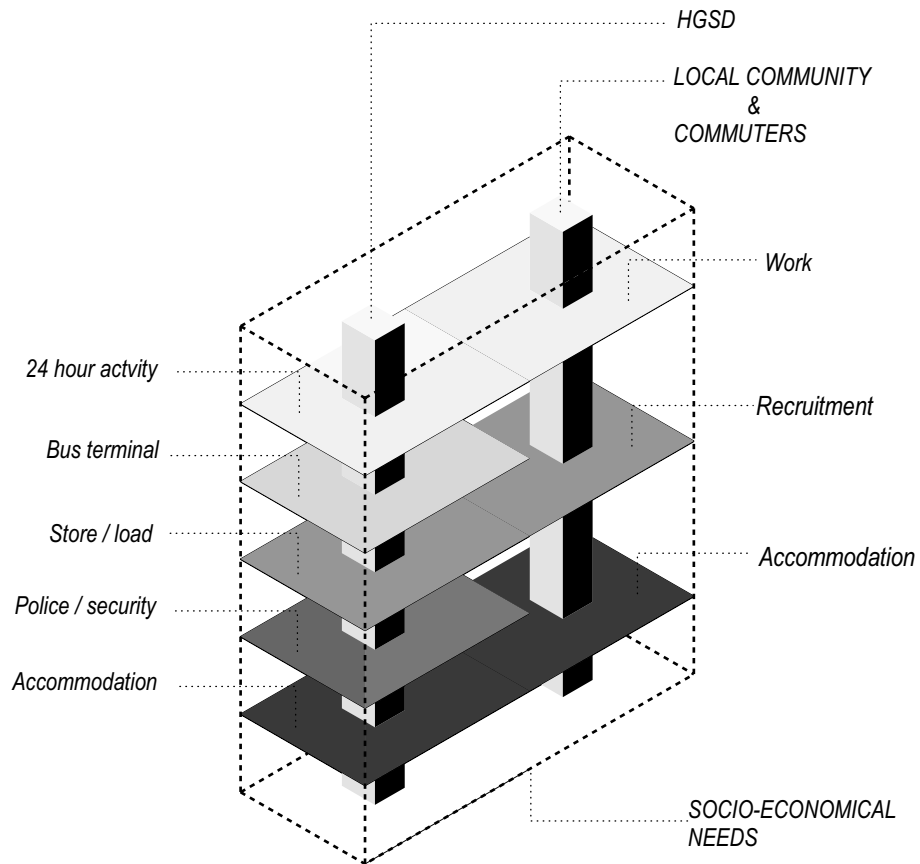
1.6 **FUNCTION**

To react to the aforementioned needs, a rather unique programme has been adopted. The following functions will form part of the accommodation schedule to be implemented:

- An Intercity Bus Terminal providing a coach service to nearby cities and towns, not covered by the Metro-rail and Gautrans networks. Public ablutions, ticketing and concessions are included.
- A warehouse facility allowing secure and dry temporary storage and loading of goods. This includes offices and ablution facilities for workers.
- A Job Centre, functionally linked to the warehouse facility acting, as a recruitment agency, while providing on-site jobs. The type of jobs available, warehouse and office work, will revolve around a 24-hour shift schedule.
- A Satellite police station, overlooking the HGSD, will provide active security.

- Office developments overlooking the Bus Terminal included to allow "eyes" on the street during office hours.
- A large part of the development will include overnight accommodation. This aspect of the project will also provide passive security through 24-hour activity.

Because of logistical reasons, the Project Profile (Chapter 02), mainly deals with the Job Centre part of the complex.



1.7 **URBAN DESIGN**

The following main guidelines are to be used to ensure a safe, secure and vibrant urban development:

- ___ Avoidance of blank walls facing the street.
Keeping the design as visually permeable as possible to ensure passive surveillance.
- ___ Keeping building heights restricted to 15m.
Occupants will be able to maintain contact with ground level, ensuring “eyes on the street”.
- ___ Clear sight lines are to be maintained at all times to enhance visual security.
- ___ Ensure a gradual transition between public and private space.
- ___ Security in terms of access to spaces should rather be implied than forced.
- ___ The most vibrant, and therefore safest, space will be one with 24-hour activity.
- ___ Mixed use functions allow for variety in terms of movement, at all times.

1.8 **SITE**

The site historically formed part of the old Hatfield Primary School, a heritage building protected by the Simon van der Stel Foundation through a clause. The only remains left of the school has been incorporated into the design of the adjacent Barloworld Delta Motor Showrooms.

Currently the site, and its infrastructure, in the form of motor showrooms, is owned by Saab Motor Company South Africa. The only vegetation found on the site is ground creepers framing the main showroom window to the north.

The new development will require the current building to be demolished. The structure, aluminum and glass, can be reconstructed elsewhere.

The current character of the site is harsh, defined by brick paving blocks and motorcars.



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1.7 Diagram of response to socio-economical needs.
1.8 – 1.10 Existing development on site.

Project Overview

1.9 **BIOPHYSICAL**

Pretoria's climate is extremely predictable, and the implications of such a climate should be reflected in the design of the development.

The average daily temperatures for January are 16 °C_{min} and 28.1 °C_{max} with a lowest and highest temperature of 8 °C and 37.0 °C respectively. This implies hot summers, with mild evenings. Rainfall during the summer months is mostly limited to afternoon thundershowers. General prevailing wind direction is from east and northwest directions in summer, with the highest average prevailing velocities (7.3 m per second in December) from a southeasterly direction. This implies relevantly low natural air movement, which increases surface temperature.

The average daily temperatures for July are 7 °C_{min} and 19.5 °C_{max} with a lowest and highest temperature of 3.6 °C and 25.9 °C respectively. This implies mild winter days, with cold evenings. The mean monthly precipitation for July is 3mm with a minimum of 0mm, which implies clear weather during winter. This aspect of Pretoria's weather is rather predictable, and ensures sunny days during winter.

Low wind velocities imply the possibility of an increase in surface temperature on exposed surfaces, which could be utilized in a building's thermal performance.

The mean annual precipitation in this region is 494 mm per year (min), 686 mm per year (average) and 1 069 mm per year (max). Most of this rain occurs during summer months, requiring harvesting and storage of rain for use during winter months. Hail does occur four days per year on average, enough to be considered a threat to building materials and vegetation.

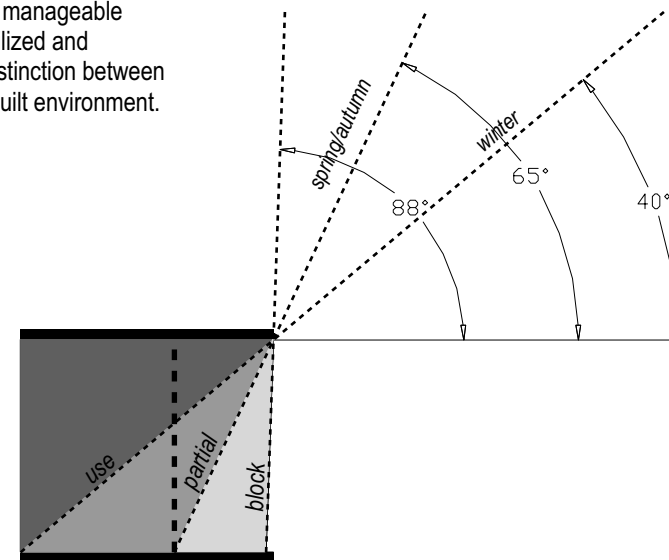
The weather information portrays an extremely predictable and manageable climate, which could be utilized and optimized to narrow the distinction between inside and outside in the built environment.

The building should promote external circulation, and the opening of spaces to the outside. A further aspect is the full usage of the climatic conditions to optimize the thermal performance of the building to minimize the use of mechanical systems.

Management of the effect of the sun will be the most significant factor. The information given in terms of solar angles at 12:00 can be interpreted in the following way:

- 88° to 65°: block the sun
- 65° to 40°: use the sun

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1.12

1.11

Solar times	Date	06.00	08.00	10.00	12.00	14.00	16.00	18.00
Clock times		06.18	08.18	10.18	12.18	14.18	16.18	18.18
Azimuth	21/12	112E	101E	91E	0	91W	101W	112W
Altitude	21/12	10	35	63	88	63	35	10
Azimuth	21/3 & 9	90E	76E	53E	0	53W	76W	90W
Altitude	21/3 & 9	0	26	51	65	51	26	0
Azimuth	21/6	-	55E	34E	0	34W	55W	-
Altitude	21/6	-	14	32	40	32	14	-

1.11 Solar angles for Pretoria
1.12 Guideline for solar angle usage