

04

SEE

the likeness of opposites

FEEL

the sense and of doing to feel

SMELL

the sense of smell

TASTE

the quality of imagination

HEAR

the sense of hearing

THEORETICAL INVESTIGATION



Introduction

This chapter looks at two guiding theories which helped shape the proposed building: firstly the experience of space and secondly the concept of bridging.

The experience of space is explained through an investigation of ancient Greek civilisations and how it impacts twenty first century architecture. It discusses elements used to manipulate space and how these affect each of the human senses in order to create a sense of space.

Through the analyses of case studies an understanding of the influence of spatial experience, on learning activities, was achieved and applied in the proposed building. These include social studies of proxemics and the effect of how different sensory stimuli affect the human condition.

The concept of bridging is investigated and explained in relation to published architectural theories.

"The visual impression, the image produced by differences of light and colour, is primary in our perception of a building. We empirically reinterpret this image into a conception of corporeality, and this defines the form of the space within...Once we have reinterpreted the optical image into a conception of space enclosed by mass, we read its purpose from its spatial form. We thus grasp...its content, its meaning."
 PAUL FRANKL (Hillier, 1996:30)

The history of spatial investigation

Before delving into the different experiences of space and its effect on human behaviour one must look at where the making of space and how the geometries which constitute these spaces originated.

The geometry of space can be traced back to ancient Greek methodologies on setting out spaces. Systems like their "12-Part System" (Doxiadis, 1972:6) and golden section geometries were widely used in setting out of temples such as the Parthenon. All these systems were derived from the geometrical concept of the universe which was also greatly treasured by the ancient Greeks.

The earliest notions of the universe being divided into various geometric parts, however, come from the writings of Homer. (Doxiadis, 1972:16) An extension of these writings was developed and each of these geo-

metric parts was related to the 5 elements of earth, water, fire, air and light. The five elements were then corresponded to the five human senses which in essence are how we experience space. (See Table below)

| | | |
|--------------|-------|---------|
| Cube | Earth | Touch |
| Pyramid | Water | Taste |
| Octahedron | Fire | Smell |
| Dodecahedron | Air | Hearing |
| Icosahedrons | Light | Sight |

Table 4.01_Relationships between human senses and geometric shapes
 (Doxiadis, 1972:17)

The experience of space

In writings about the experience of space, there are opinions which suggest that humans do not only experience space by using the five senses mentioned before. The question to ask now is whether this is true and humans do have another sense; the sense of space, or whether it is just a combination of the other five which facilitate the formation of a spatial sense.

According to Hillier, (1996:85) every moment of our experience, and that includes the experience of space, is unanalyzable as a whole and must be broken down into the analysis of some of its constituent parts in order to gain a deeper understanding.

This starts to suggest that the experience is a combination of senses or parts which are already known to us and that it is not a new sense which should be added to our list of five. Herbert Norbert-Schultz explains

(Pearson and Richards, 1994:2) that the human relationship to the built environment is rooted in the experience. People create their own mental image of their environment thus creating feelings of well-being, comfort, discomfort, etc.

These feelings are commonly related to an individual's personality or background and can be related to the functional or symbolic aspects of space. In addition to this one can add the writings of Vere Gordon Childe (Childe, 1956:76) which states that; "people gradually discover by experiment how things and persons can be arranged spatially, so defining an idea of space".

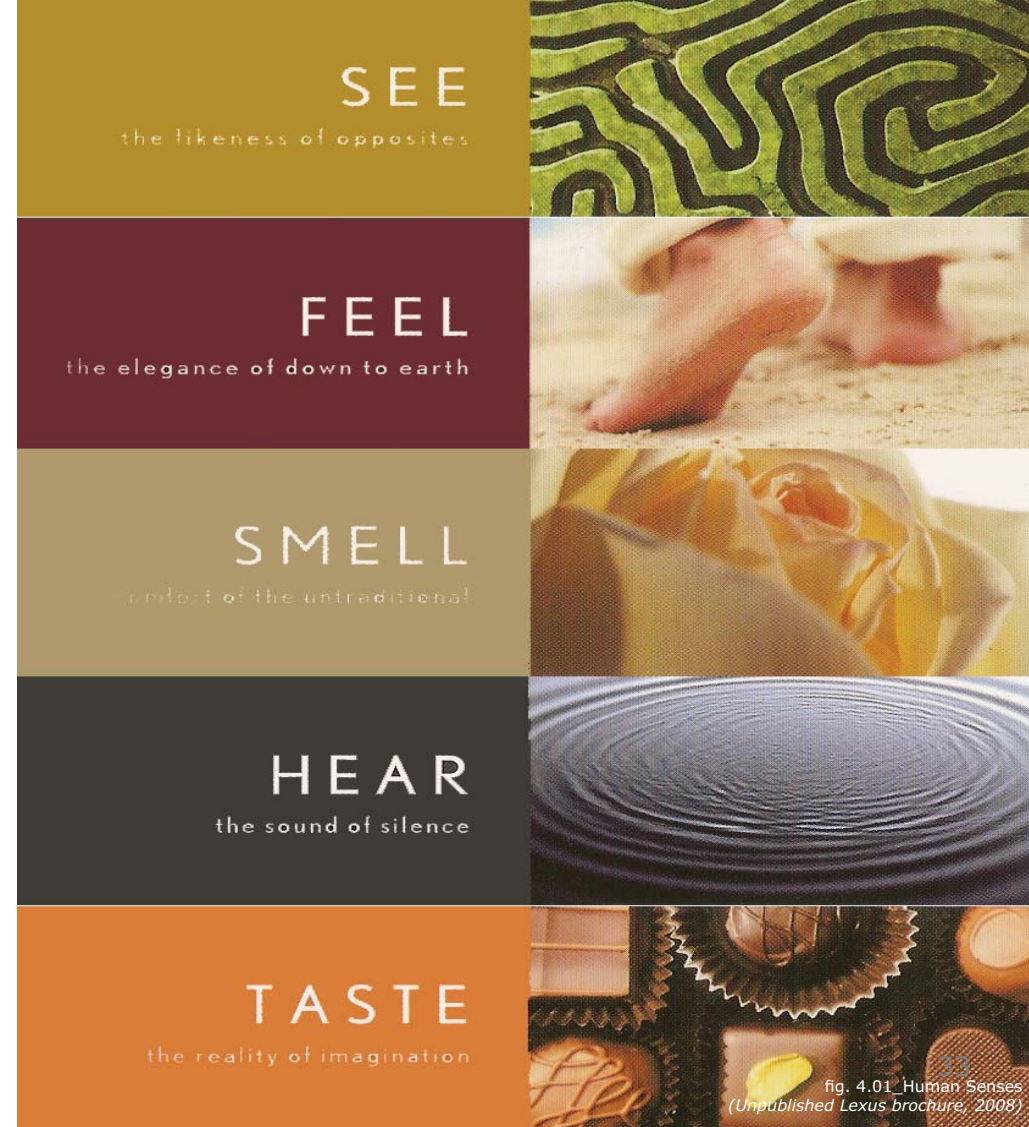


fig. 4.01 Human Senses
(Unpublished Lexus brochure, 2008)



The tools do we use to manipulate the experience of space

Sight

"In light, our sense of place is based on a physical reading of the environment; in the dark, it is conditioned by a more acute awareness of our bodily position" (Verges, 2007:221)

Although architecture needs to be experienced by a combination of all the senses (Papanek, 1995:76) it is our initial sensory perception of the object which intrigues human curiosity.

The contrast between light and dark, natural and artificial lighting and soft or hard lighting can enhance or detract from the experience of a space.

Hearing

Sounds from the environment can create a relation to the outside of the building without having a visual perception of the surrounding context. Wind howling and a gentle

draught through a space has very different effects on the human condition. A feeling of isolation can be achieved by the hollow echo of footsteps in a blank hard space versus the feeling of proximity in a warm occupied space.

Feel

The sense of touch can be divided into various categories with two of the main categories being physical touch and emotional feeling. Physical touch can be manipulated with textures, cold and warm surfaces and the feeling of the elements on the human body.

Emotional feelings include the feelings of proximity(closeness)/isolation, being exposed or enclosed and emotions including happiness, fear, etc.

Taste

The experience of taste in architecture is difficult if not impossible to capture and it is therefore proposed that an association with taste is

rather created. The proposed restaurant in the building could start to make this association.

Smell

A strong relationship between interior and exterior spaces can be used to draw aromas from plants, etc. from the surrounding environment by means of natural ventilation.

The sense of smell has a very strong relationship with memory and the smell of various materials used in the proposed building can create associations with various spaces or exhibitions experienced by the visitor.

The symbolism of space

Going back to ancient Greek writings, the symbolism of space can be seen in the writings about the male and female gods; Hermes and Hestia. Hermes, the male god of movement and communication, was known as the god of the external and public space and Hestia was the female goddess of the fixed, im-

movable, interior/domestic space. (Kent, 1990:105) The house or internal space was considered the domain of the woman whereas the man was supposed to spend his time outdoors. (Kent, 1990:104) A short poem by Homer (Kent, 1990:105) links Hermes and Hestia in a friendship between the interior and exterior.

Even in the exploration of gender specific symbolisms one starts to see elements which can influence the experience of space by its user. This relationship is evident in even good contemporary architecture where the relationship between inside and outside complements one another. The reason why it is considered good architecture might lie in the uncertainty it creates of whether the user is inside or outside, comfortable or uncomfortable.

The use of space

The use of architectural space could be discussed in terms of two schools of thought:

- 1) architecture dictates the way in which people use space
- 2) the way people use space dictates the architecture. (Kent, 1990:2)

Architecture dictates the way in which people use space

The way in which spaces are set out has a direct effect on the social existence of a group of people in it. Architects very seldom design buildings which are not for human use so it can therefore be expected that the relationship between people and space will be found when looking at the elements which contains a space. We can now derive that the way in which people use space is directly affected by the configuration of the elements containing the space and the arrangement of elements inside the space.

Evident in the headings of this chapter; the common notions of space

mostly try to explain space by referring to entities which relate to things which are not space itself. In the architectural field research is commonly concerned with; the use of space, the perception of space or the production of space. Architecture does however sometimes detach space from its human component in the study of spatial hierarchies and spatial scale. Space is very seldom researched as an entity on its own but rather something which conforms to principles in architectural or social science fields.

The way people use space dictates the architecture

The way people use space constitutes spatial patterns. It does not only consist of a neutral framework for social and cultural forms. Human nature has its own spatial forms and it is the way in which we as humans interact with, congregate in, avoid and dwell in space that adds to the unique character of a space. (Hillier, 1996:29)

The use of space also has a very close relationship to the culture of the people using it. In our multicultural society this becomes a very important consideration when designing spaces for multi-cultural users. Culture in this case should be looked at more holistically rather than breaking it up into various segments like; technology, symbolism and world view, economics, social structure and political organization. (Kent, 1990:2) Another way to create cultural unity is to create a new culture where discrepancies of race, gender and religion are eliminated. This new culture becomes the 'common ground' which should enable the designer to create spaces suitable for everyone concerned with Art and Architecture.

According to Roger Scruton space is something which cannot stand as an entity on its own but it is rather the "...obverse side of the physical object." (Hillier, 1996:28) He argues that the space in a field and that inside a cathedral is exactly the same,

but for the enclosure which makes the one space appear to have distinctive properties of its own.

Although Scruton seems oblivious to the symbolic meaning and sensory experience of space, he does however touch on something which gives us clues into the experience of space. If space is seen as such a physical entity, which exists whether it enclosed or not one can ask the questions: Can a space contained by specific boundaries be taken out of its enclosure, or does the space 'leak' out if one or more of the boundaries are removed? According to Descartes; (Hillier, 1996:29) space stays the same even if its constraints are removed. What does change however is the perception of space and it is this perception which is of utmost importance in this dissertation.

This one dimensional view on space is dangerous and might make one oblivious to the role the perception of space plays in human interac-

tion. Out of these two arguments a new argument arises and looks at a combination of both how people influence architecture and how architecture influences people.

Winston Churchill said (Pearson and Richards, 1994:3) that first we shape our buildings and afterwards our buildings shape us. This reiterates that the process is never just a one way flow of influences. It is rather a process which is a constant exchange of influences between our built environment and our social activities. In other words our buildings grow with us over time.

To reiterate the previous statement one can now look the extremes of sensory experience in architecture. In monumental buildings the spatial experience is forced onto the user and no doubt is left about the statement made by its presence. In contextually more sensitive architectures the sensory experiences are rather left for the more receptive

observers to enjoy. These experiences would however not be possible without the interaction between the building and its user. The monument will become a desolate white elephant and the quiet architectural intervention will most probably go unnoticed by passersby.

Bridging as a conceptual idea

Bridging and gluing

In an ever expanding institution, such as the University of Pretoria, it becomes necessary to sometimes include areas which fall outside the existing boundaries of a site. The integration of such areas has to be done with great sensitivity and great conviction in order for the new precinct to act as a whole. The notions of bridging and gluing are two solutions to the same problem and should, in effect, have the same outcome.

When one considers bridging it is evident that there is a separating element which has to be crossed in order to merge two adjacent areas. The bridge as an element is the catalyst for the creation of embankments or pavilions on either side of the divide. This creates the opportunity for the rejuvenation of the existing edges. Without the bridge these embankments cannot exist.

Gluing areas together involves the act of physically bringing two sides in contact with each other and although the same integration of areas are achieved, a very different philosophy is adopted. In this case the dividing element might become the bridge and the two sides is drawn towards each other in order to merge underneath the new bridge.

Bridging and gluing are ways to join different things and elements of these things should be allowed to flow into each other's realms so that the character of the transition space becomes something new which is representative of both sides.

The Bridge

"A bridge is a construction in both the technical meaning of the word, thus being a term, and in its etymological meaning – it is a constructed path. A bridge is a construction that ensures the unbreakable continuation of a road or a path across a body of water, across another road, across a chasm, a mountain pass or

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some other obstacle. As such, the bridge is, above all, a part of the road. At the same time, it alters the character of the road, it brings the vertical dimension into the landscape and it can be perceived as a special place on the road. Two main structural elements of man's existential space – a road and a place – are united in the bridge. The bridge is both a road and a place. The bridge is an artefact, which has been loaded with aesthetical value and symbolic meaning, being used as a worn-out metaphor to describe all kinds of connections in a very wide range of spheres of life."

Lehari, 2004

As explained by Kaia Leihari in her article 'A winter landscape with a bridge' she explains how the the bridge symbolizes the expansion of our will over space. For human beings the riverbanks are not only apart, but also 'separated' from each other. It is the realization of this separation that drives us as human beings 'to bridge'.

Leihari's analysis of Georg Simmel's article 'A Bridge and a Door' brings forward the conclusion that: firstly, a bridge connects, thereby creating a feeling of security, secondly, a bridge expresses frozen movement and thirdly, a bridge emphasizes, supports and creates a landscape. This landscape can be observed as a work of art.

Similarly to Simmel's view on a bridge, Martin Heidegger explains (1996:152) that a bridge becomes a place or dwelling and that allows us to experience the uniqueness and unity of space in two ways: first, it creates the feeling that we belong to the place on the other side of the separation, and second, it allows us to enter that place.

Heidegger's theory of how the bridge becomes part and entrance to places on either side of the divide illustrates how the bridge is representative of both sides. It has its own unique character but still relates to both embankments.

"The bridge swings over the stream with ease and power. It does not just connect banks that are already there. The banks emerge as banks only as the bridge crosses the stream. The bridge design- edly causes them to lie across from each other. One side is set off against the other by the bridge. Nor do the banks stretch along the stream as indifferent border strips of the dry land. With the banks, the bridge brings to the stream the one and the other expanse of the landscape lying behind them. It brings stream and bank and land into each other's neighbourhood. The bridge gathers the earth as landscape around the stream. Thus it guides and attends the stream through the meadows. Resting upright in the stream's bed, the bridge-piers bear the swing of the arches that leave the stream's waters to run their course. The waters may wander on quiet and gay, the sky's floods from storm or thaw may shoot past the piers in torrential waves-the bridge is ready for the sky's weather and its fickle nature. Even where the bridge covers

the stream, it holds its flow up to the sky by taking it for a moment under the vaulted gateway and then setting it free once more.

The bridge lets the stream run its course and at the same time grants their way to mortals so that they may come and go from shore to shore."

Heidegger, 1996

Introduction

After careful consideration of the needs of the Department of Art and investigation of the site and precinct requirements, the following schedule of accommodation is proposed:

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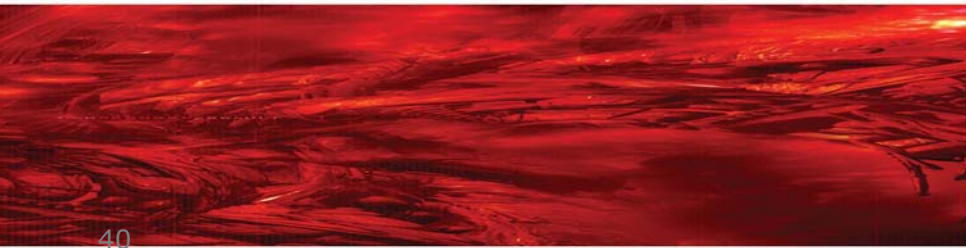
ACCOMMODATION SCHEDULE

LOWER GROUND FLOOR

| | | | Total |
|------------------------------------|--------------------|--------------------|-------------------|
| Post-graduate studios | 107m ² | 53m ² | 160m ² |
| Workshop | | | 58m ² |
| Meeting rooms | 22.5m ² | 22.5m ² | 45m ² |
| Digital printing lab. | | | 69m ² |
| Media conservation & media library | | | 38m ² |
| Digital library | | | 24m ² |
| Lecture theatre (250seats) | | | 246m ² |
| Classroom (170seats) | | | 190m ² |
| Art storage & restoration | | | 245m ² |
| Store room | | | 17m ² |
| Ablution | | | 45m ² |
| Plant room | | | 66m ² |

GROUND FLOOR

| | |
|--|-------------------|
| Entrance foyer including lift lobby & stairs | 190m ² |
| Exhibition area (bridge) | 425m ² |
| Informal seating area (bridge) | 170m ² |
| Restaurant (inside) | 110m ² |
| Restaurant (outside) | 100m ² |
| Restaurant kitchen | 67m ² |
| Ablution | 45m ² |

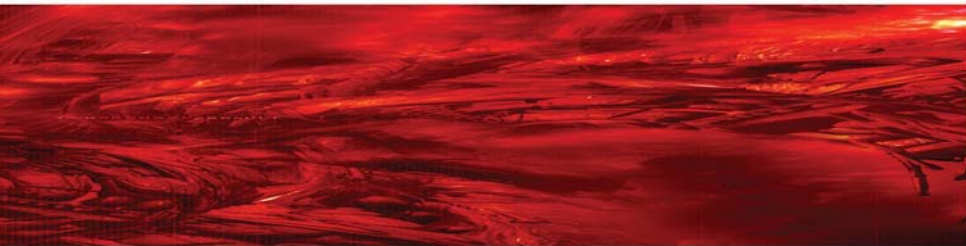


FIRST FLOOR

| | |
|--|-------------------|
| Gallery 1 | 163m ² |
| Gallery 2 | 124m ² |
| Special collections gallery | 66m ² |
| Artist Proof Studio printing lab (including etching area, developing area solvent room, equipment store, paper hallway and press areas) | 216m ² |
| Open sculpture exhibition area | 110m ² |
| Crit rooms and conference rooms (includes 4crit rooms & 2conference rooms) | 278m ² |
| Ablution | 45m ² |

SECOND FLOOR

| | |
|-----------------------------|-------------------|
| Exhibition area | 116m ² |
| Special collections gallery | 66m ² |
| Print exhibition area | 142m ² |
| Offices and boardrooms | 278m ² |
| Ablution | 45m ² |





CONTEXT ANALYSIS

fig. 6.01_Pretoria figure ground





Introduction

This chapter will look at the site; starting with a historical overview of relevant buildings and other elements before delving into the site data which influenced the design process.



National analysis

As the nation's capital, Pretoria stands as an ambassador of South Africa to the rest of the world. Pretoria boasts with a number of foreign embassies and thereby has strong relations with the rest of the world. Pretoria stands at the brink of becoming the capital of the African continent and with that being the first place of interest for foreign visitors.

The University of Pretoria stands as a leading tertiary institution not only in the Province but also in the country. It is therefore important that the leading research facility in the country also stand as an ambassador for South Africa.

Metropolitan analysis

As previously mentioned, the University of Pretoria stands at the forefront of research in South Africa. The establishment of a centre for visual art which can match the esteem of an internationally recog-

nised research facility will help to improve the university as a whole. The city of Pretoria and more specifically the University of Pretoria provides an invaluable role in providing community upliftment programs to help establish a city which can be compared with the best in the world. Pretoria sits at the heart of a number of lower income settlements including Soshanguve, Mamelodi and Atteridgeville. This makes it particularly well positioned for social and educational upliftment.

Pretoria also sits on the main route into northern Africa and acts as a gateway into the rest of Africa.

Local analysis

The University of Pretoria is situated between the city centre and the rapidly expanding eastern suburbs. The high density traffic on Lynnwood Road which carries up to 3000 vehicles per hour gives excellent exposure to the university. Further analysis on site specific issues are addressed in the sections to follow.



Buildings along the pedestrian axis "Tukkielaan" which impacted design decisions and site selection

"Tukkielaan" becomes an important axis in the design of a centre for visual arts. Surrounding this axis are various facilities concerned with arts and culture.

The facilities which form part of a whole new artistic precinct was one of the main motivations in the selection of the site and building program.

Each of the different buildings on the axis creates an activity space in front of it which spills out onto "Tukkielaan" thereby activating this spine.

The "Tukkielaan" spine is now proposed to become the new connection point between Main Campus and South Campus which also house a number of facilities concerned with the arts.



fig. 6.02



6.10. The Aula



6.11. The "Ou Lettere" building



6.08. Amphitheater



6.09. Merensky Library



6.06. Musaion



6.07. Theology



6.03. Town and regional planning



6.04. Visual Arts



6.05. Built environment



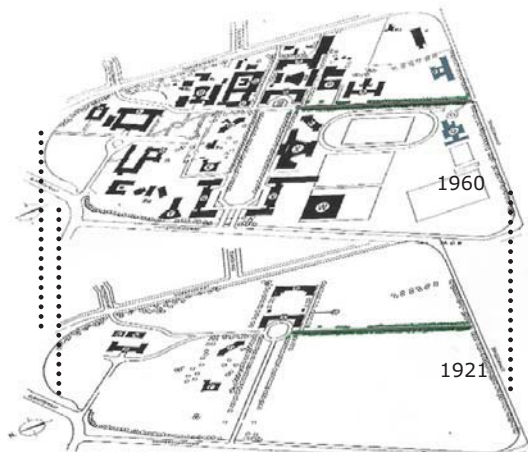


fig: 6.12

1930 - proposal for new entrance gates to Tukkieleaan by Gordon Leith



1950 - Tukkieleaan from the "Ou Lettere" building to Lynnwood Road



1987 - Tukkieleaan entrance from Lynnwood Raod



Tukkieleaan acts as one of the main pedestrian links from Lynnwood Road towards the "Ou Lettere" building which was the first building constructed on the main campus of the University of Pretoria. This link is populated on either side by amenities concerned with the arts. These include the Departments of Architecture, Fine art, Music, the Aula and the Merensky Library, which currently houses the Eduardo Villa museum, before it intersects with the historical grid in front of the "Ou Lettere" building.



fig. 6.13

Department of Visual Arts

The Department of Visual Arts which currently houses the study fields of Graphic Design and Fine Arts was designed by Meiring, Naude and Burg, Lodge & Burg Architects. It was opened as the Physical Education building on 8 October 1948 and used for that purpose until 17 February 1987 when it was reopened by Dr. D.M. Joubert to house the Department of Visual Arts.

The fact that the building was not designed specifically to house this department meant that there was no allowance for exhibition of students' work or for proper lecture theatres and studios. The conversion of gymnasium areas to serve as studios and lecture rooms led to unsuitable lighting, audio and other requirements for their current use and students are currently forced to have their examination exhibitions at the university's Groenkloof Campus. Due to these factors it is proposed that areas with very detailed specifications be relocated

into a new building which meets the requirements. (Ad Destinatum, 1960:141)



fig. 6.14 Photographs showing the Department of Visual Arts in context



fig. 6.16_Location diagram of the Department of Visual Arts



fig. 6.15 Photographs of studio spaces inside the building

Boukunde

Architecture at the University of Pretoria started in 1929 and has a history of moving around the city going from the "Klubsaal" to Vermeulen Street, the Kerry building, the engineering building in 1957, back to the "Klubsaal" in 1958 before settling in its current location in 1960. Because of its nomadic history it might be appropriate that it be the catalyst for linking the university's main and south campuses across Lynnwood Road. (Ad Destinatium, 1960:123)

The building was renovated by architecture lecturers and professionals in the department and this gives clues to the close proximity in which architectural professionals and students live to their immediate living and learning environments.

The building has a number of lecture theatres, classrooms and studios, but as with the visual arts building there is not sufficient space for exhibition of students' work.



fig. 6.17_Aerial photograph of the Boukunde building



fig. 6.18_Aerial photograph of the Boukunde building



fig. 6.19_South elevation



fig. 6.20_West elevation



fig. 6.22_Location diagram of showing the Boukunde building in context

Lynnwood Road

Lynnwood Road is a very important entity in the investigation of the physical elements of the site. It is an arterial road which feeds traffic from the east of Pretoria into the city centre. This road, at the time of publication of this document, carries an average of 1800 to 3000 cars per hour in peak and off-peak times respectively. It forms a divide between the main and south campuses of the University of Pretoria and on a more local scale, a divide through the proposed art and architecture precinct.

Lynnwood Road which was previously called College Avenue and "Strubenpad", was the only route for horse drawn carts between the current Park Street crossing and the farm Hartbeespoort which belonged to Captain Struben. (Ad Destinatium, 1960:87)

Traffic noise from Lynnwood Road is of great concern for educational facilities adjacent to it. Traffic noise calculations have been done in or-

der to establish the extent to which acoustic properties of the proposed building had to be resolved. This is further discussed in figures 6.29-6.31 and chapter 09, fig. 9.15.

Figures 6.23 - 6.25 shows Lynnwood Road in its current state. The use of pavements for parking slows down traffic immensely. This is mostly due to vehicles moving in and out of informal parking areas.



fig. 6.23_Photograph of cars parked on Lynnwood Road

fig. 6.24_Lynnwood Road in context

fig. 6.25_Photograph of cars parked on Lynnwood Road

fig. 6.26_Location diagram of Lynnwood Road

South Campus

South Campus is made up of two parts of the farm previously known as Elandsport, which also included the area on which main campus is situated. Before it was taken over by the University in 1989, the area now known as South Campus, was the property of the CSIR and used as the Fossil Fuel Research Institute and the division for energy technologies. (Ad Destinatium, 1960:56)

South Campus now comprises of a number of facilities including buildings which house the Departments of Town and Regional Planning, Performing arts, Construction economics, Hydro engineering and University of Pretoria Printing. South Campus houses various facilities concerned with the arts. It is therefore appropriate to extend an arts precinct across Lynnwood Road onto South Campus. The inclusion of South Campus into this new precinct will help to bridge the gap between the main campus and South

Campus of the University of Pretoria.



fig. 6.27_South campus in context

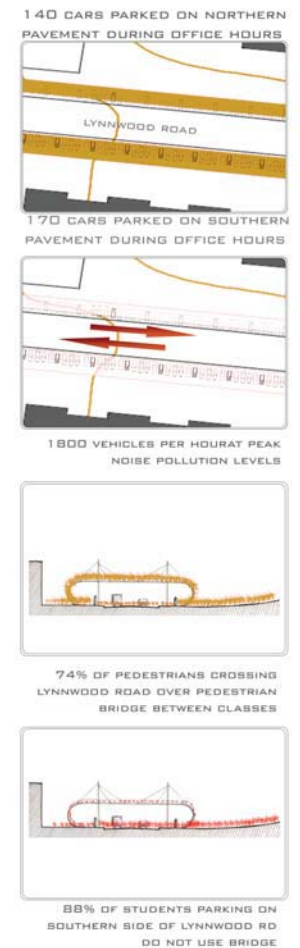
fig. 6.28 Photograph of South campus and existing pedestrian bridge



fig. 6.29_ Increase of students crossing Lynnwood Road in relation to pedestrian entrance



fig. 6.30_ Parking and pedestrian movement on Lynnwood Road



As previously discussed, the number of vehicles on Lynnwood Road cause many problems. Due to the lack of formal parking areas around the University, students are forced to use pavements on either side of Lynnwood Road for parking. This not only cause a great increase in traffic congestion but also cause pedestrians to cross Lynnwood Road close pedestrian entrances to the University. (fig. 6.29) Although most pedestrians moving between Main Campus and South Campus use the existing pedestrian bridge, most students who park on Lynnwood Road cross it on foot causing danger to students and motorists. Noise pollution due to high traffic density will be discussed in chapter 09.



fig. 6.31_ Lynnwood Road vehicle speeds

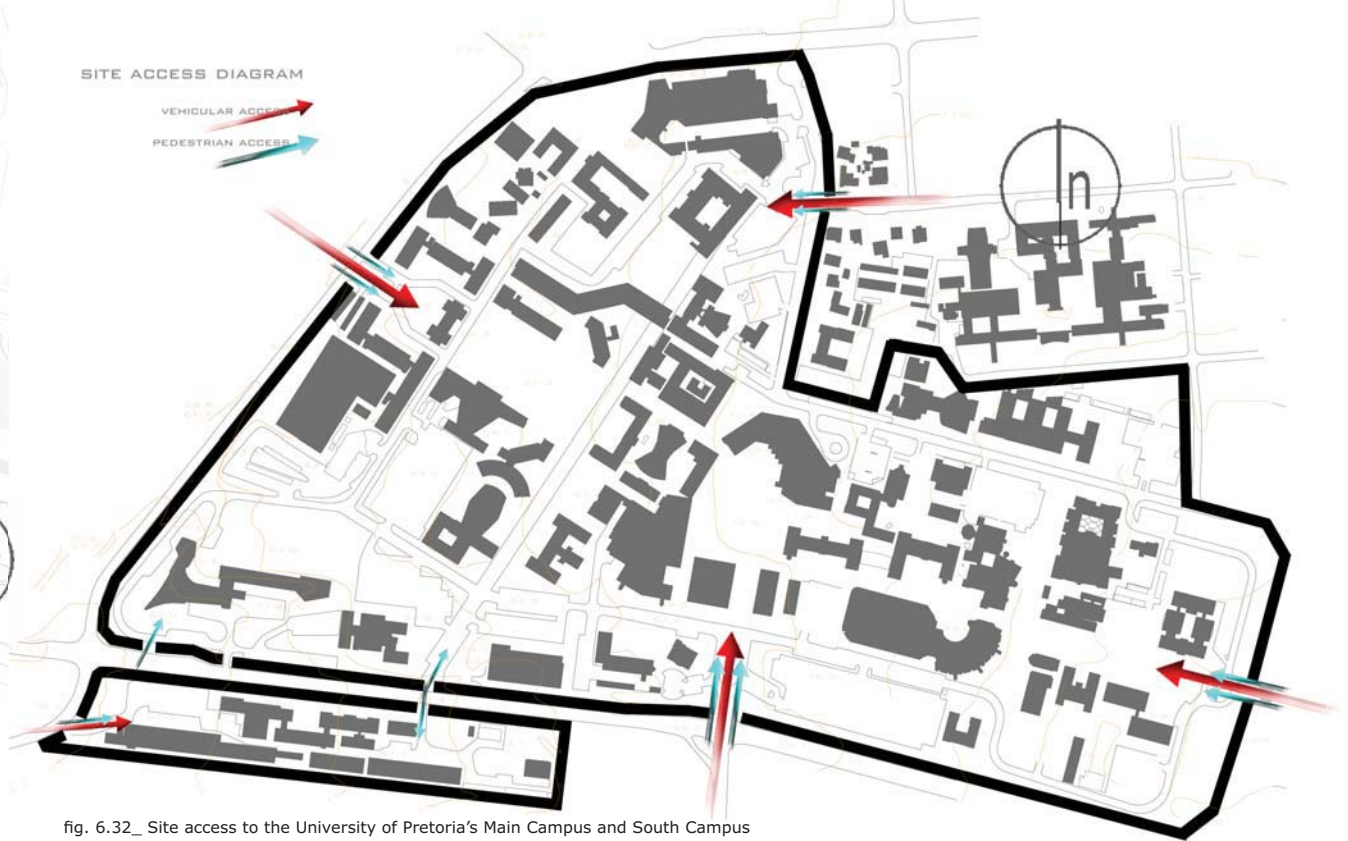


fig. 6.32_ Site access to the University of Pretoria's Main Campus and South Campus

Figure 6.31 shows vehicle speeds at various points between the Roper Street and University Road intersections. It is important to note that the maximum speed of vehicles is at the pedestrian entrances to Main Campus and South Campus. This is also the area where most pedestrians cross Lynnwood Road. The combination of vehicle speed and increased pedestrian movement make the situations even more dangerous. Figure 6.32 indicates pedestrian and vehicular entrances to Main Campus and South Campus. Three entrances to Main Campus and only one to South Campus exist on Lynnwood Road. The building proposed in this dissertation is situated at the place where the Main Campus and the South Campus entrances sit across from one another. This provides the opportunity to fuse the two campuses together, at this point, by using pedestrian movement across Lynnwood Road.

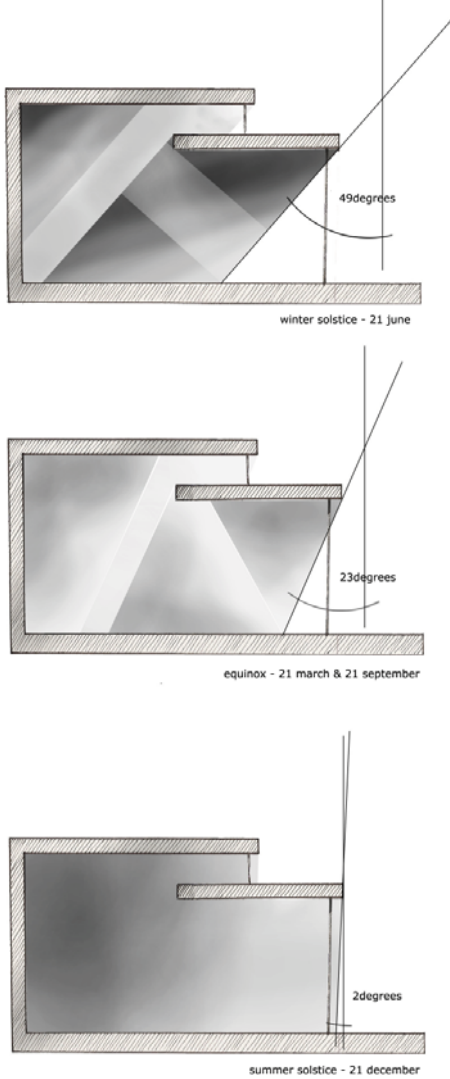


fig. 6.33_ Solar Angles at soltices and equinox

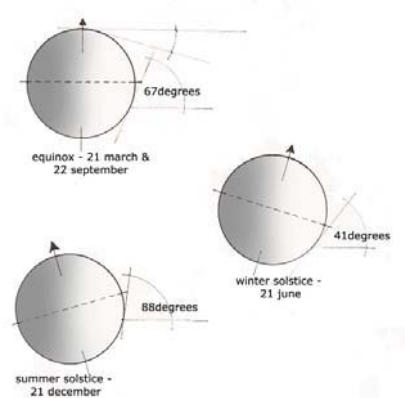
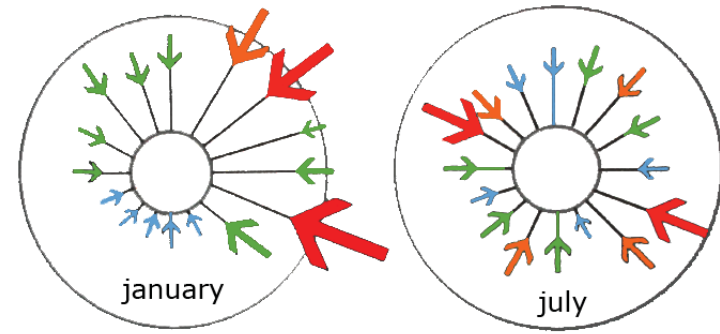


fig. 6.34_ Solar Angles at soltices and equinox



Summer
South east - north east

Winter:
South east - north west

fig. 6.35_ Prevailing wind directions

| Month | Temperature (°C) | | | | Precipitation | | |
|-----------|-------------------|-----------------------|-----------------------|-----------------|-----------------|---------------------------------------|----------------------------|
| | Highest Re-corded | Average Daily Maximum | Average Daily Minimum | Lowest Recorded | Average Monthly | Average Number of Days with \geq mm | Highest 24h Rain-fall (mm) |
| January | 36 | 29 | 18 | 8 | 136 | 14 | 160 |
| February | 36 | 28 | 17 | 11 | 75 | 11 | 95 |
| March | 35 | 27 | 16 | 6 | 82 | 10 | 84 |
| April | 33 | 24 | 12 | 3 | 51 | 7 | 72 |
| May | 29 | 22 | 8 | -1 | 13 | 3 | 40 |
| June | 25 | 19 | 5 | -6 | 7 | 1 | 32 |
| July | 26 | 20 | 5 | -4 | 3 | 1 | 18 |
| August | 31 | 22 | 8 | -1 | 6 | 2 | 15 |
| September | 34 | 26 | 12 | 2 | 22 | 3 | 43 |
| October | 36 | 27 | 14 | 4 | 71 | 9 | 108 |
| November | 36 | 27 | 16 | 7 | 98 | 12 | 67 |
| December | 35 | 28 | 17 | 7 | 110 | 15 | 50 |

Table 6.01_ Temperature and precipitation
(www.weathersa.co.za)

| Site Data | |
|------------------------|--|
| Municipal data: | |
| Building lines: | 4.5m on sides of erf 3.5m from street |
| Height: | Zone 5 - 19m |
| Coverage: | Zone 5 - Parking 80%, Other 60% |
| FSR: | Zone 5 - 2 |
| Climatic data: | |
| Position: | 25°44'S 28°11'E |
| Height: | 1330m |

Table 6.02_ Municipal data