



110	Content
120	Introduction
121	Design Problem Statement
122	Review of Similar Projects
123	Design Intent
124	Context
130	Methodology
131	Research Method
132	Ethical Consideration
133	Analysis
134	Limitations

01



Chapter 00]			Chapter 06]		
000	Title Page	001	610	Design Development	047
010	Abstract	003	620	Major Discoveries	054
020	List of Figures	004			
Chapter 01]			Chapter 07]		
110	Content	007	710	Design Solution	058
120	Introduction	008	720	Accommodation	059
130	Research Methodology	011	730	Final Design	060
Chapter 02]			Chapter 08]		
210	Background	014	810	Materials	068
220	Aims and Objectives	017	820	Technical Report	075
Chapter 03]			Chapter 09]		
310	Theory	019	910	Addendum	102
320	Conclusion	021	920	Bibliography	106
Chapter 04]					
410	Context & Site	024			
420	Framework	034			
430	Conclusion	035			
Chapter 05]					
510	Case Studies	038			
520	Conclusion	043			
530	Precedent Studies	044			



INTRODUCTION

30 200 people, representing approximately a sixth of the commuters to the Pretoria CBD, are reliant on minibus taxis (Department of Transport, 2006c: 2). The minibus taxi has a major role in the public transport sector of this country. A misconstrued view however exists around the existing use of minibus taxis as a means of public transportation. The taxi driver's methods are seen as unconventional and often resort to riot and violence to state their case and reach their goals. An article in the Mail and Guardian (BYRNE, 2008) claims that the majority of the taxi drivers only know how to operate in an informal sector.

Minibus taxis are to be excluded in the FIFA 2010 world cup organization as a means of transport in and around the CBD's; they will be replaced by the Bus Rapid Transportation (BRT) system (SANTACO, 2008b). Aims of the BRT are to rejuvenate the cities' ailing transport networks by quickening commuting in and out the CBD, and in part, address the transport congestion and chaos (Donnelly, 2009). Traditional communal transport would be severely affected or reduced due to the introduction of this new transport system. As a result a well defined South African cultural legacy would not be available for experience by overseas tourists. In addition, the livelihood

of the taxi owners and drivers as well as the community would be affected. For example informal traders along the routes and in the taxi ranks could be out of business.

DESIGN PROBLEM STATEMENT

The Gautrain concession includes the provision of Feeder and Distribution Bus services, and their two key market segments are existing motorists and airport passengers (Gauteng Provincial Government, 2004). Koenderman (2009) indicates that 59,3% people household income per month is under R5 000, which means that a large part of the working commuters are excluded from the category of the Gautrain concession design. The need for the taxi industry with its supporting social and business sector remains for a large part of the South Africa society. Furthermore, no provision is made for the informal traders at the Gautrain stations (Otto, 2009). Whilst modal integration is of the utmost importance to the Department of Transport, there is an underlying problem with incorporating the taxi industry, because of its unfriendly persona towards the bystander and the environment (Steer, 2009). This should be addressed and designed for, and the role of taxis into the Modal sector should be re evaluated. Taxis could be seen as reliable, comfortable, convenient and true to their legacy – social.



FIG.2. THE TAXI IN THE URBAN CONTEXT



REVIEW OF SIMILAR PROJECTS

Structures built accommodating taxi ranks do not really communicate improvement, but rather stagnate the industry in its current state. Various initiatives by the government exists to organise taxis into a more formal public transport system by erecting new taxi ranks and trading facilities. The Blood Street Taxi Rank in Pretoria serves as an example. However taxi ranks do not mature as envisioned by government. There remains an extent of disorganisation and own mindedness displayed by taxi drivers and traders alike. They are hesitant to familiarise with their surroundings. In addition the facilities are often overdesigned, not adapting to the personal creative needs of the users. On the contrary, there is no design contribution whatsoever when the taxis just acts on his own initiative and parks on an open urban erf. A transformation charter is required, redefining the taxi industry into its correct place in the transport grain. It should move away from an unorganised transport system to one that is more organised and fitting to its purpose. When designing the

taxi rank facilities it should be positioned in between the two extremes, leaving room for the users' own initiative.

Projects trying to achieve these goals are the Claremont Public Transport Interchange in Cape Town, the Baragwanath Taxi Rank in Johannesburg CBD and Mahube Valley in Mamelodi amongst others. The following issues surface when studying the success or failure of these projects:

- What is the scale of the project?
- What is the surrounding land use; are there other functions that can be incorporated?
- What is the reason for establishing the Taxi Rank;
 - is it a place of origin
 - destination
 - or a just a holding area?
- Are there sufficient infrastructure and facilities provided for the key users?
- Circulation and coherency of the user:
 - taxis,
 - pedestrians
 - traders

- Is there sufficient access for all users?
 - Is the design in a place where they can relate and acclimatise to with the all the users' needs in mind?
 - What is the personal experience for each user?
 - Is there a sense of place and ownership?
 - Is there focus on the design of the structure, robustness of materials, sustainability and its resource efficiency?
- Rather than trying to erode the business of taxis and the participating community involvement, all parties should be incorporated into a viable and sustainable transport system for the city of Tshwane to serve the best interests of everyone.

A city and its inhabitants represent a growing organism of cultural, economic, ecological and geopolitical intricacies. These can be translated into space and form. , it consists of physical dimensions and attributes with key installations and linkages that are dominated by high speed, connectivity, structures and control. However, the dweller still inhabits an essential part of the space and form. A design proposal should be a place for people, the user and bystander.

FIG.3. CLAREMONT PUBLIC TRANSPORT INTERCHANGE



FIG.4. BARAGWANATH TAXI RANK



FIG.5. MAHUBE VALLEY





FIG.6. TAXI RANKS IN PRETORIA

The project theme establishes itself within this realm: finding a relationship between time and movement through experience. The Taxi Transit Park is a project where the transport system has a symbiotic relationship with the community and nature.

CLIENT

South African National Taxi Council, SANTACO.

BRIEF

A taxi rank service that integrates the taxi, trader / retail and commuter.

In addition offices for the South African National Taxi Council and the Metropolitan Police Officials have to be accommodated in the complex.

CONTEXT

Erf number R/1/30.18

The proposed site is situated in the North Western part of Pretoria CBD, between Struben -, Potgieter - and Vermeulen Streets opposite Kruger Park Residential units and Schubart Residential units.

DESIGN INTENT

The transport facility should enhance the everyday journey. Conflicts of users are to be eliminated, stipulating the path of comfort for the dweller. The main function of the building complex is to act as a public service area providing comfort and convenience to its users. Although the taxis are the generator of the activities the design should respond toward nature and the user, creating a social place for people.

THE USER

• TAXIS

The taxi persona, in particular the space it inhabits, should be unpacked, rethought and then put together again enabling a new identity in the environment which it operates. There should be designated and demarcated areas allocated to taxis, with shelter and sufficient facilities, so that the facility becomes a preferred destination along their daily route.

• PEDESTRIAN: Commuter

There should be a quick route to his/her destination, avoiding any confusion or conflict on his path.

• PEDESTRIAN: Lingerer

He/she should be lured into the structure, distracting him/her to dwell into his/her own experience. The senses should be activated through the use of vegetation, light, water, textures. Branding could be employed to highlight the present.

• TRADER

He/she should be situated to optimised position in relation to their clientele. The trader should form part of the experience along the journey.



METHODOLOGY

During the project the status of pedestrian and vehicular movements within the study area was investigated with the aim of creating a place for all the users. The project makes use of extrapolated figures based on case- and precedent studies. Existing transportation trends is used to assess the feasibility of the proposed Taxi Transit Facility. The theory component investigates the relationship between time and movement.

Cultural protocols are taken into consideration by recognising underlying relationship. The everyday experience of the commuters and the opinion of the taxi industry reveals antagonism towards decision makers in respect of the BRT system.

RESEARCH METHOD

The study makes use of a combination of quantitative and qualitative methods of research in evaluating the project problem statement and establishing the project theme. The quantitative research method consists of documentary analysis of relevant books, Government proposals and similar projects as published in journals.

The qualitative focuses on group discussions and interviews with parties involved, engineers and architects. It should be noted that assessment is conducted whilst the policy regarding the proposed BRT system is enforced. The taxi industry is opposing the proposals and this could affect any evaluation research.

However, this research contributes by proposing an integrated form of transport modes. In addition, the proposal reduces conflict and enhances the commuters' experience of the everyday.

ETHICAL CONSIDERATION

The project focuses on integrating the community through the merging of the taxi industry into the transport grain. The social goal is to upgrade a public transportation system that caters for the majority of the population. If successful the misconstrued perception of taxis and taxi ranks would be altered through addressing current issues relating to taxi ranks by responding to nature and the user.

ANALYSIS

A design outcome is sought that enhances the everyday

experience, this is done through utilising the raw and documented data retrieved and exploring through text sketches and diagrams. Site analysis is informed by the group site framework (See Addendum B). The analytical data and raw data from site visits in conjunction with theory component are amalgamated resulting in a design proposal that responds to the user and the surrounding context. This will enhance and the transport system that supports and contributes to the economic growth of Tshwane.

LIMITATIONS

Due to the partially unorganised and unapproachable current status of the taxi industry, cooperation from relevant sources is restricted. In addition the following aspects proved challenging:

- Use and cost of materials
- Defining the exact compared to income group that the project design is for
- Structuring the current informal, unstructured system allows for subjective interpretation
- Adapting the design proposals according to the users' needs.
- To overcome the current perception of taxis and what taxi rank should be.



FIG.7. PEDESTRIAN_SHOPPER

FIG.8. TAXI RANK

FIG.9. TAXI

FIG.10. TRADER



210 Background
220 Aims & Objectives

02

BACKGROUND

The birth of the taxi industry is a result of various processes. The industrialisation in the 1950's and black South Africans leaving their traditional homestead to look for work in the mines were important contributors. Due to the apartheid land act people were relocated from their tribal land into homelands and 'labour reservoirs' on the fringes of cities (Fisher, 1998: 163). This fragmentation within the urban landscape created an opportunity for a new transport mode: the taxi. The deregulation of the industry unleashed uncontrolled and haphazard growth in the 1980's. Taxi drivers started to compete for allocations resulting in violent confrontations. A Taxi Council was established in 1994. This organisation, now called the South African National Taxi Council (SANTACO), is recognised by government as the only legitimate industry representative.

The minibus type taxi is an unscheduled public passenger road transport service that operates on a specific route or routes, or where applicable, within a particular area by means of minibus or midibus (Department of Public Transport, Road and Works, 2001). The minibus taxi industry is a critical part of the public transport sector, operating and competing with the subsidised bus industry. As illustrated in figure 12 (Department of Transport,

2006c) 15% of the people travelling to the CBD in peak hour commute by minibus taxis. Approximately 10 000 more passengers prefer taxis rather than buses. The Gauteng Household Travel Survey (Department of Transport, 2006b) undertaken in 2002/03 estimated 176 400 passengers travelling via mini-bus taxi daily.

Minibus taxis continuously adapt to the needs of the commuters. Taxis represent a pragmatic solution to the transport problem whilst supporting a community. This reality could hardly be dismissed from the South African society. Mini-bus taxis are the fastest and cheapest way to travel in the city (City of Johannesburg Transport Road and Rail, 2009). However, the continuous use of unconventional methods has resulted in an industry that is labeled as offensive, selfish and unsafe. In part this perception of minibus taxis resulted in them being discarded from the FIFA 2010 World Cup public transportation plans (SANTACO, 2008c).



FIG.11. EXISTING TAXI RANKS AND ROUTES

No of people in am peak travelling to CBD		
Mode	%	No of people
Minibus Taxi	15,1	30 200
Bus	9,5	19 000
Train	6,5	13 000
Car	33,0	66 000
Walk	33,0	66 000
Other (Bicycle, motorbike)	2,8	5 600

FIG.12. NUMBER OF PEOPLE TRAVELLING TO PTA CBD



Tshwane traffic is increasingly being characterised by congestion, with a negative result on city growth and inaccessibility contributes to urban sprawl of business and associated inefficiencies. Furthermore, the quality of life of citizens is influenced adversely. Commuters spend more time whilst travelling and public transport doesn't flow (Department of Transport, 2006a). The alone factors led to the introduction of the Bus Rapid Transit (BRT) system. The role of the BRT system is to support corridor development, leading to a more efficient city. An additional aim is to promote public transport as preferred mode. The BRT system is also an initiative to provide support for the Gautrain Development (Department of Transport, 2006a).

The BRT lacks the more personal aspect of interaction and convenience for the commuters, ignoring the informal traders' existence.

The proposed system for phase 1 with the identified BRT is as follows:

- BRT route between Mabopane and Pretoria Station
- BRT route between Bell Ombre Station and Mamelodi
- Enhanced bus corridor on Church Street between

Atteridgeville and Hatfield

- Enhanced bus corridor on Church Street between DF Malan and Mamelodi
 - Feeder routes
- This is indicated on the route map figure 12 (Advanced Logistic Group, 2008).

Layered approach to the transport network planning should rather be adopted, with the Gautrain (under construction) representing the bottom of the hierarchy of modes, the coarser grain of the public transportation system. Next is the existing rail system followed by the proposed BRT system, enhanced bus corridors and then backed up by feeder or distribution systems that are the finer grain of the public transportation system. Minibus taxis should be redefined as part of this hierarchy rather than being an independent, informal transport mode. Their position is in the finer grain of the hierarchy supporting the coarser levels of the transport system, has never been acknowledged.

FIG. 13. BUS ROUTE MAP INDICATING PROPOSED BRT SYSTEM AND INNER CITY DISTIRBUTION SYSTEM

Government claims that the initiative of the BRT forms part of the transformation of the taxi industry. According to an article in the Mail & Guardian (28 December 2008) taxi owners are the majority shareholders in the companies (that would be contracted by the cities to run this new service). SANTACO remains sceptical. The resulting effect on the taxi industry and its operators is unclear. Attempts to integrate the BRT into the public transport system have been met with resistance from the taxi associations (Dmons, 2009: 1). With a redefinition of the Taxi transport system, designed into the hierarchy of an overall transport system, taxis could benefit from being part of an organised transport system playing the role of a more flexible and personal transport mode. By merging the taxi and the BRT system they could complement each other, enabling a symbiotic relationship in support of the community.

The opportunity to reintroduce this facelift of the minibus taxi is the 2010 FIFA World Cup, giving tourist exposure to a unique South African experience. Taxis give a distinct feel in terms of mixture of cultures. There is certain warmth in travelling in taxis that personify Africa and South Africa. By utilising this transport mode the perception of South Africans would be changed. This redefinition could be communicated in the design of the Taxi Transit Park. An architecture of sustainability could render the taxi as preferred transport mode.

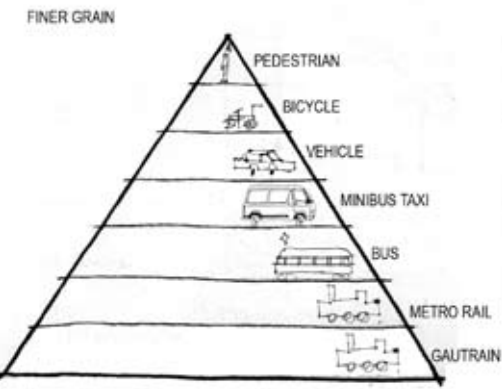


FIG.14. TRANSPORT HIERARCHY PYRAMID.



FIG.15. RAIL ROUTE MAP INDICATING GAUTRAIN CURRENTLY UNDER CONSTRUCTION AND EXISTING METRO RAIL

AIMS AND OBJECTIVES OF THE STUDY

- 01] Using data obtained to find a suitable solution for the design problem. The data originates from the questionnaire (see Addendum A) and case studies.
- 02] Designing according to the needs of the key users of the facility:
 - taxi
 - pedestrian and
 - trader.
- 03] Exploring the opportunities of minibus taxis as a communication tool with the possibilities of advertisement and branding.
- 04] That the transport facility becomes a public service centre with the foremost focus on convenience for the user.
- 05] Supporting the city of Pretoria by generating collective social, interactive space that can be allied with.
- 06] Creating a sense of place and allowing users to take ownership of the building.
- 07] Initiating a paradigm shift away from the misconstrued view of minibus taxis and taxi ranks, to a more sustainable approach.
- 08] Creating a platform on which to base design decisions and generate future possibilities.
- 09] The theory of experience should investigate the relationship between time and movement. This should be evident in the planning diagram.



FIG.16. REDEFINING TAXI AND ITS PURPOSE



310	Theory
320	Conclusion

03



ARCHITECTURE — TIME AND MOVEMENT

Architecture (space, structure and enclosure) is experienced through the movement in space and time (Ching, 2007: X). It is difficult to define what time is? Time is a reality known to mankind, although we can't see it, touch it or even feel it - it remains obvious. One experiences time, but can't comprehend it; it is both evident and mysterious.

To be is to be in time, because time alone persists; either you continue or you cease to exist. Time is perceived as being primarily the sequence of past, present and future. Since the past is no longer, and the future is not yet, time is only the moment, now. With present it should be understood that it is meant only that 'moment by moment' lived by, being erased by time itself. It is otherwise described by Miralles (Futagawa, 1999b: 99) as experiential, because one experiences the instant.

FIG.17. TIME AND MOVEMENT

What is called the present, is in reality only the disappearance of the future into the past (COMTE-SPONVILLE, 2004: 116). Therefore real time is only in the present, because the past is no longer, and the future is not yet. There is a consciousness of time only because it remembers the past and anticipates the future. This is perhaps the cause of the day planner and the recording of every day in a diary. Time that is measured or imagined is composed predominantly of the past and future, meaning that for the most part time only exists in our minds (HEIDEGGER, 1996: 457). Time becomes referential because the present experience is referring to previous or future events, thus bringing together different moments in time.

This indicates the existence of two different times, two different ways of thinking about time. Comte-Sponville (2004: 118) suggested that the first variation of time is objective time, the sequence of 'nows' arising and passing

away. The sequence of 'nows' is uninterrupted and has no gaps, but it changes instantly. The second variation is time as it pertains to the consciousness and the mind, part of the collective memories, merely the sum of the past and the future. The first variation of time could be named experiential time and the second referential time, duration (Figure 18). They are the same thing, only considered from two different viewpoints. Time is present both experientially and referentially and cannot exist in isolation from one another.

Time is 'intuited' becoming, that is to say, it is a transition which does not get thought but which simply tenders itself in the series of 'nows' (Heidegger, 1996:483). Experiential time is concerned with the present, the actual events that take place while moving through a space (Quiros, Makenzie, McMurray :2). It is the sensory experience that the user undergoes that relate to the instant just lived. Experiential architecture is about that path unfolding through movement.

The other instants in time are past and future made present. Where past, present and future are never the same, time consists of duration. It is possible to replay an occurrence in your mind, but the future never influences the past. By recollecting memories, the past does influence the future. Life is an incessant timeline that indicates the progress of present to future, establishing a past (Heidegger, 1996:473). Referential time is how memories and meanings are brought to the present moment. Referential Architecture is made of instants and images that bring back memories and significance to the actual experience. It is a way to escape from reality to memory, through the process of thinking and then reacting (Quiros, Makenzie, McMurray : 3). Everything undergoes change over a certain length of time, rather than trying to change time, architecture should evolve with its ever changing characteristics. Miralles stated that 'to be permanent is contrary to existence, things are forever changing' (Futagawa, 1999a: 102).

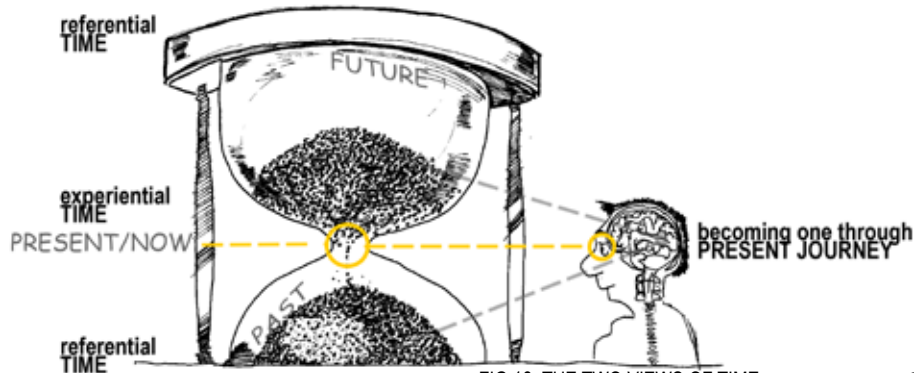


FIG.18. THE TWO VIEWS OF TIME



During the process of animation the relationship between movement and time is accepted as fact (Banchoff, Cervone', 1992:274). Animation translates the static to dynamic, making a lifeless body alive. Such a relationship could be explained through a scene from the animation Jaspore Morello (Figure 19), where a city character staggers because he is contaminated with a fatal disease that is eradicating the city's population. Exposing individual moments in the course of time, a narrative is shaped that can be related to movement and time. Architecture of time is composed of various and diverse ways of experiencing the layers of time, enabling it to act freely both in form and time.

'Nobody has ever noticed a place, except at a time, or a time except at a place' (Cajori, 1926: 405).

'Since we move in time, through a sequence of spaces, we experience a space in relation to where we've been and where we anticipate going' (Ching, 2007: 240).

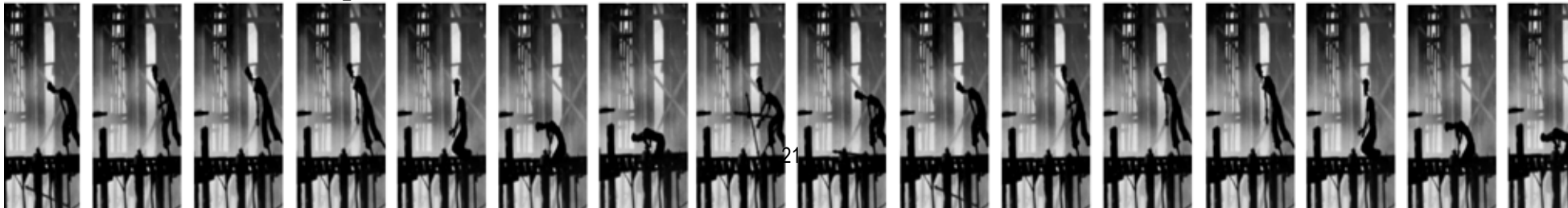
The path of our movement can be concealed as the perceptual thread that links the spaces of a building, or any series of interior and exterior spaces together (Rahim, 2001a: 19). Ching argues that all paths have a starting point from which there is movement through a sequence of spaces to the destination (2007: 264). The contour of the path depends on the mode of transportation. While a pedestrian can turn, pause, stop and rest at will, a motor vehicle has less freedom. A car can be tailored tightly to its dimensions, whilst a pedestrian that tolerate abrupt changes in direction, requires a certain amount of freedom to effect these changes. Life is a journey; in this voyage everybody is free to take their own path, creating an individual experience. Two things always remain present: space and time (Futagawa, 1999b: 32). Experiential- and referential time become one through the present journey.

CONCLUSION

In designing the new Taxi Transit Park it is important to consider the experience of the users. The movement through space and time should be staged. Referential architecture requires that certain elements are acknowledged in a taxi rank. These should remain to gain the traders' facilities significance, the taxis and spaces for a social gathering. The design should be adaptable according to the user's needs. Within the taxi industry there is a cultural identity that warrants investigation. In addition the carbon footprint that is exerted by the industry has to be addressed.

Experiential architecture represents movement through space. The transition between pedestrian and vehicle should be investigated during the design process, as well as the relationship between nature and man.

FIG.19. ANIMATION TIME & MOVEMENT_MYSTERIOUS GEOGRAPHIC EXPLORATIONS OF JASPER MORELLO





UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

