I would like to thank my friends, family and mentors for all the support and guidance they have bestowed upon me throughout the course of this year. Most importantly, I would like to thank my parents for all the support through this arduous knowledge-gathering trip I have been on for the past couple of years.
ARCHITECTURE & IDENTITY

REDEFINING THE TAXI INDUSTRY

USING ARCHITECTURE AS THE CATALITIC METHOD OF FORMULATING IDENTITY
Unlawful, renegade and detached, these are some of the metaphors that can be said to be the summation of the taxi industry. Albeit the taxi system predominantly operates as the chief transport mode, and economic enabler for its users, it still maintains a predominantly degenerate perception.

The focus of this thesis is to emphasize how through re-appropriation and re-defining of the formative and descriptive elements of the taxi industry, one can begin to articulate a logical and befitting identity for the taxi industry. The methodology utilized is based on the principals of identity formulation, and programmatically expressive architecture. The intention of which, is to devise a methodology in which architecture can be used to restructure existing systems in a manner, which enables them to obtain a compelling logic. In so doing, the premise is to illustrate how through the use of design, architecture can be molded into a contrivance for formulate identity.
The theoretical point of departure of this thesis is to explore the concept of architecture as the catalytic instrument in the creation, or identification of identity. Taking into consideration the degenerate image that the taxi industry has today, and its pragmatic relevance to society, the thesis aims to formulate programmatic and spatial qualities that begin to elevate the perception of the taxi industry.

The design intention, aims to explore the measures in which architecture can be used to begin to redefine the taxi industry, through the uses of spatial articulation that represents the marriage between the public, and the taxi industry in a formal, informal and passive manner.
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Idea
The formative idea behind this thesis stems from the inspiration of using architecture as a means to formulate identity. It begins by examining the notion of identity through examining its conception, recognition and quantifiably attributes. Lastly, the intention of the thesis is to determine whether, architecture can be used to redefine or re-appropriate a group's current identity.

Subject Matter
The taxi industry is the test subject chosen by the author, because of its social relevance and its currently unfavorable perception.

Rationale
The taxi industry currently has the identity or perception of an unregulated, renegade industry with no formal regulatory or accountable body. However, it also simultaneously serves as the primary transport mode and economic enabler for most black people in South Africa to day. (SANTACO, 2008).

Pros
• Primary public transport system
• Convenience and affordability for the masses
• Its proliferation enforces its social relevance

Cons
• Little known regulatory body
• Drivers seen to not respect road rules
• Responsible for 9% of road collisions. (NDoT, 2001).
• Dilapidated infrastructure and unsafe taxis.
Strategy
In the context of this thesis the sagacious manner in which to quantify the success of its objectives would be through the evaluation of; 1: the use of programmatic arrangements to highlight each facet of the taxi industry. 2: To have the architecture relay the narrative of the taxi industry through the use of spatial articulation. 3: Through the use and re-interpretation of architectural typologies that pertain to the transport (more over the taxi industry).

Implementation
In trying to formulated a new identity for the taxi industry, the thesis adopts a strategy in which the primary three elements of the industry, being:
1. The general public who use the taxis on a regular basis.
2. The operational element, being the taxi and drivers themselves, and
3. The regulatory body that has been set out to govern the industry
are expressed in a manner that exemplifies a progressive, conformist and approachable identity.
Conceptually the intention is to use expressive architecture, in which the public become passively involved in the daily operations of the industry, thus increasing its transparency, which invariably leads to a change in the perception/identity that the taxi industry has.

Deliverables
• Provide the formal body of the taxi industry, a public façade that the public can relate to.
• Provide the taxi industry with a building structure that interacts with its stakeholders.
• Provide the taxi industry with the facilities which enable it to better conform to regulations set out by the TRP (Taxi Recapitalization Program)
CHAPTER ONE

1. CHAPTER 1- INTRODUCTION
Sumation

INTRODUCTION

THEORETICAL INVESTIGATION

DESIGN PROBLEM

DESIGN INTENTION
CHAPTER 1 - INTRODUCTION
The birth of the public transport industry is a direct result of the industrialization period in early South Africa. This period in addition, resulted in the migration of Black South Africans from their traditional homesteads to cities in the pursuit of work (SANTACO, 2008). Due to the lack of infrastructure and state provisions, the taxi industry emerged as the preferred mode of transport for the black populace, as it offered the most economical alternative. From the onset, the industry had to compete with the subsidized bus and train systems, which in later times had a negative impact on the industry, as is made evident by its deregulation and conflict ridden nature (SANTACO, 2008).

The deregulation of the taxi industry in the 80’s unleashed uncontrolled growth of the industry and provided fertile grounds for conflicts over route and ranking facilities. During the same period, the industry boomed into an economic strong hold, boasting an urban market share of 65% that soon became unmanageable in the absence of any form of regulatory framework (SANTACO, 2008).

The unity initiatives initiated before 1994 culminated in the establishment of the South African Taxi Council (Sataco). In 2001, under the watchful eye of the Independent Electoral Commission (IEC), the democratising process was completed when a National Executive Committee was elected under the presidency of Mr. Thomas Muofhe. The organisation, now called the South African National Taxi Council (SANTACO), is formally recognised by government as the legitimate industry representative. (SANTACO, 2008)

The industry today represents the most accessible mode of transport to the largest number of transport ‘customers’ across a variety of income and need segments. As such, taxis carry 65% of the 2,5 billion annual passenger trips in the urban environment and serve as the base-load public transport carrier, both during peak and off-peak transport times (santaco, 2008). According to the national regulation body, there currently exist approximately 130 000 vehicles operating with legal transport permits. Approximately 95 000 of these vehicles, are used for short and medium distance trips in the urban environment. The remainder of which, are used for rural and inter-city transport. More than a third of the vehicles operate in the Gauteng province alone.(Govender, R:2010)
Theoretical investigation:

Architecture is in essence, the practice of designing the world we live in; therefore, it has the innate ability of playing an important role in defining identity, and molding space in a manner that leads to the creation of social significance. According to the book “identity Theory and Social Identity Theory”, by Jan E. Stets and Peter J. Burkes’, when formulating identity, one has to structure the identifying elements in a manner that is indicative of the entity they are intended to represent. For this reason it is safe to assume that the most appropriate manner in which to elevate the disjointed, renegade (yet efficient) nature of the taxi industry, is through the re-appropriation and re-defining of it’s formative, expressive and operational elements.

“An architecture description is a formal description of a system, organized in a way that supports reasoning about the structural properties of the system. It defines the system components or building blocks and provides a plan from which objectives can be achieved, and systems developed, that will work together to implement the overall system” (wikipedia: 2010). With regard to the systems of the taxi industry, it is conceivable to assume, that one could use Architecture as the apt tool in re-defining and re-interpreting its systems, in a manner, which instills a sense of identity. In essence, from the afore mentioned definition, it is safe to assume that the coherent architectural articulation of the formative parts of any system, give relevance and meaning to any pragmatic system.

It can be argued, that only through the validation of ones identity, be it innate, didactic or socially warranted, that one can begin to express the qualities that enable a group to present a socially appropriate decorum. It is through the acknowledgement of identity that one can begin to express the distinctive attributes of individuals, groups or society that enable them to take their appropriate place with in society. This ideology made evident by former president Thabo Mbeki, in the prelude to the “I am an African” speech examines the role self worth plays in formulating identity.
Design problem:

- The principal problem is how to create an architectural language that gives relevance to two uncelebrated parties, who share a similar interest. The aim is to create an architectural language, that both embraces and instills the formality required for a regulatory body, but yet simultaneously acknowledges and validates the informal nature that encompasses the public transport industry.
- Secondly, how does architecture begin to redefine, re-evaluate and re-appropriate a system, which stems from policies of segregation and disempowerment?
- Thirdly, how does one architecturally create a precinct, which aims to serve as a hybrid edifice for the formal aspect of the public transport system, its operational requirements and its informal users?

Design intention:

The primary design objective extrapolated from the brief is the formulation of an architectural strategy and edifice that through its programmatic constraints methodically helps elevate the perception of the taxi industry. The intention is to do so by following a design methodology that provides the industry with the formal aura it so lacks, whilst incorporating its social informal nature. In essence, the design intention is to create a precinct that becomes the catalyst in the re-interpretation of the taxi industry.

Conceptually formulating an integrated identity for the taxi industry through the cohesive union of formal, informal and social active space
CHAPTER TWO
INTERPRETATION

HISTORICAL ORIGINS
MODERN PERCEPTION
CHAPTER 2- INTERPRETATION
BACKGROUND

The government policies of apartheid did not develop in isolation, but rather as a response to the increasing black political initiatives. “Segregation and apartheid assumed their shape, in part, as a white response to Africans’ increasing participation in the country’s economic life and their assertion of political rights” (info.gov: 2010). As a result, the government introduced legislation that legalized mass forced removals of black South Africans from economically advantageous areas of the city. The purpose of this was to further alienate the races, and additionally dis-empower the black populous. This sentiment, further compounded by the introduction of government’s regulation of the job colour bar, geared at reserving skilled work for whites, additionally denied black workers the right to organize. This intention systematically de-rated black workers to third class citizens of the work force.

This methodology of structuring the social systems was the formative principal behind the forced removal of non-whites from economically active areas of the urban realm. The resultant effect of which, was the creation of racially designed locations, located on the outskirts of the cityscape. These locations where predominantly disenfranchised areas which often in addition to physical barriers had vast spatial barriers separating them from the city and other locations. This in turn meant that there was no direct access for non-whites to areas of economic activity. The prevailing issue was then, further compounded, by “legislation, which was consolidated in the Natives (Urban Areas) Act, 1923, which entrenched urban segregation and controlled African mobility by means of pass laws” (info.gov: 2010).

The summation of the above-mentioned circumstances led to the formation of a disjointed ecology, which lacked the empirical linkages required between the job space and the un-skilled workers it needed to sustain it. Although the premise of the construction of a juxtaposed city framework, served the needs of the government, it still needed to formulate a system that would help service its operational requirements. Thus, the emergence of a need for a public transport system geared at the transportation of unskilled workers to and from the locations to the city. In order to achieve their objectives, the primary modes of transport favored by the government
where the bus and train systems. This was due to that fact that they served more than the needs of the black migrant workers. This was made evident though their continued subsidization (SANTACO.2008). These modes of transport, however, were less effective in transporting the masses as they lacked the infrastructural capabilities needed to permeate the dense fabric of the townships.

Queue the proliferation of the taxi industry among the townships, and all transportation facets of the black populace. The endeavor was further escalated by the economical advantages the system offered the everyday users. Secondary attributes, which lead to the success of the industry as a whole, was that it was an industry solely owned, managed and used by the black population.

![FIG 7-Taxi routes around Pretoria CBD](image.png)
The prevailing ideology behind today’s taxi industry is of one that is, immensely under regulated, operates under no higher authority, and “although it only accounts for 4.5% of the total vehicle population, is involved in 8.6% of all collisions” (NDoT, 2001). As such, taxis carry 65% of the 2.5 billion annual passenger trips in the urban environment and serve as the base-load public transport carrier, both during peak and off-peak transport times. The industries proliferation of the countries thoroughfare has led to South Africa’s road’s being rated among the most dangerous in the world, with accidents claiming the lives of no fewer than 10 000 people every year (Govender, Allopi, 2006: 101). This alarming stat is primarily due to the taxi industry continuation to flaunt traffic regulations, which are dually difficult to enforce due to the industry’s informal nature, and the inept nature of the countries enforcement agencies.

Due to the nominated regulation councils, inability to express a prominent authoritative presence, the taxi industry has developed a renegade temperament that operates on its own terms. Unlike any other professional body or anthology of expertise, the taxi community does not rely on any unions or regulatory body in order, to civilly voice their grievances. Instead, they choose to follow a non-conformist methodology, devoid of mediatory attributes that lead to the formulation of amicable resolutions with whichever party they may be in conflict with. This in turn has led to a number of violent outbursts by the industry in which numerous civilians have been injured or killed, because of the absence of a deliberation platform. This in addition, has been made evident by the amount of in fighting within the industry for lucrative transportation routes. It is clear that some form of accountable body that has a larger public presence than SANTACO needs to be developed in order to represent the industry at grass rout level. The negation of which could lead to further bloodshed and decline in confidence in the industry as a whole. Evidence of which is seen by the recent protests the taxi industry has had with the introduction of the Bus Rapid Transit (BRT) system. This is primarily because “the Bus Rapid Transit (BRT) system would see over 500 taxis being removed from the first trunk route, to be introduced in Johannesburg between Soweto’s Orlando and Coca Cola Park (Ellis Park) in central Johannesburg by June 1. (According to an SA National Taxi Council briefing on Monday)”. (http://roadsafety.wordpress.com: 2009). Governments planned expansion of the BRT systems to other parts of the country, could similarly be met with the same opposition.
With the industry prominent role in South Africa’s transport system, and its estimated economic value of more than R16, 5 billion annual turnover (arivealive:2010), the government has begun to recognize its magnitude and importance to the nation. As a result, the government has undertaken definitive measures to transform and restructure the industry. Of the most publicized initiatives, is the Taxi Recapitalization initiative. This policy aims to:

• The systematic introduction of safe and comfortable vehicles for taxi commuters through scrapping allowance which will be an incentive for taxi operators to hand in, on a voluntary basis, the very old vehicles for decommissioning (arivealive:2010).

• The economic empowerment of the taxi industry through a package of business opportunities that the Recapitalisation Project affords the Taxi industry to participate in nationally through the SATACO structures as well as at the level of the provincial co-operatives (arivealive:2010).

There has however been some opposition to the incentives, as was made evident by The Human Sciences Research Council. They reported that the majority of South Africans support plans to replace the current taxi fleet with new and safe vehicles. Only

13. CHAPTER 2- INTERPRETATION
28% of commuters who regularly use the service are opposed to the recapitalisation program. About 50% of those opposed to the recapitalisation plan did so in the belief that it would increase unemployment and result in higher crime levels (arivealive:2010).

Among the least known proposals is the Minibus Taxi Awards. The aim of this proposal is to encourage professionalism, safety and efficiency in this sector (arivealive:2010).

The continuation of this ominous approach to conducting their method of operating has left a repugnant taste in the mouths of all stakeholders, being the commuters who have to share the motorway with the taxi drivers and the passenger that travel with taxis on a daily basis. The fact that “65% of all commuter trips are undertaken by minibus taxis” (Govender, Allopi, 2006: 100) serves as an indication as to the prominence of the taxi industry in South African transport structures. Thus, there is a need to unsoil the image of the industry as a whole and give it the structured prominence that it so needs, but that does it in a manner that does justice to its innate social nature.
CHAPTER THREE
ARCHITECTURE & IDENTITY

FORMATION OF IDENTITY
MANIPULATION OF SPACE
TYPOLOGY
CONCLUSION
17. CHAPTER 3- FORMULATING IDENTITY
IDENTITY CONSTRUCTS

The schools of thought regarding identity, state that: “(a) In philosophy, identity (also called sameness) is whatever makes an entity definable and recognizable, in terms of possessing a set of qualities or characteristics that distinguish it from entities of a different type (Wikipedia: 2010). (b) Social identification stems from the categorization of individuals, the distinctiveness and prestige of the group, the salience of out groups, and the factors that traditionally are associated with group formation”. (Ashforth, E, etal, Mael, F, 1989; 20).

The aforementioned descriptions of identity, aim to indicate as to how the discernment, configuration and acknowledgment of identity form the cognitive rationale behind group formation and group perception. The following narrative aims to highlight how through the use of architecture, one can begin to redefine identity, by re-interpreting and re-evaluating the building blocks that led to the formulation of the initial view of identity.

Social Identity

In beginning, one has to understand the parameters that are required in the formulation of identity, as well as the manner in which to appropriately articulate those parameters to best represent identity. For the purpose of this thesis an understanding of social, individual, constructed and perceived identity has to be reached in order to present an irrefutable identity. From this stand point, one can begin to examine the doctrines stipulated in the book “Identity Theory and Social Identity Theory”, which state. “When formulating identity, one has to structure the identifying elements in a manner that is indicative of the entity they are intended to represent”. By this, the authors imply that the formulation of identity is the direct result of the grouping of distinguishable elements that pertain to a particular group or society. Thus from the aforementioned statement one could assume that identity theory, or social identity is created through the coherent articulation of all formative, and descriptive elements that pertain to a particular group or entity.
With an understanding of how social and individual identity, are created or metaphorically formulated, one can then commence and decipher how constructed and perceived identity are created.

**Architecture and Identity**

Thus in addition to identity theory the next measure in understanding identity design is to comprehend how, firstly built structures can create identity, and secondly how social perceptions help formulate identity. In continuing, the content will exam two uniquely definable architectural types that have built structures the exuberate identity. The first type is from the time of classical architecture, with particular emphasis on Roman architecture. Roman architecture derived its identity through the use of symbolisms and meaning (Grandtradition.com; 2010). The primary intention (mostly inspired by political propaganda) behind Roman architecture was to impress, instill a sense of dominance as well as perform a public function (oneonta.edu, 2010). Although originally most of the forms used to create Roman architecture spawn from Greek architecture, the forms have been modified to better represent the imperialist nature of the Romans. The sheer scale and ornamentation of their buildings became what best represented their architecture and thus what helped them define their identity. In essence, it can be argued that the Romans began creating architectural identity through the use or re-interpretation of architectural typologies. The success of which is made evident by the immediate recognition of all its architectural forms, from its churches to bridges to social spaces. In all of which, there is a unique architectural language that remains constant, and thus invariably re-enforces Roman identity.

In further examining the use of built structures, to represent identity, (in a modern context) a comparative analysis is made between two
modern building types, that both follow a particular typology to convey a particular identity. The first structures in comparison would be the design of modern religious structures. Of the religious typologies, nun has transformed over the ages more than the Catholic Church, this reason could be attributed to a number of controversial reason, namely the need to appeal to a larger audience. The Churches, do how ever still maintain a sense of grandeur and religious logic, which still make them readily recognizable as religious structures. Although their primary forms have changed from a cross to more elaborate modern forms, they still make use of the same symbolism to convey their identity. The symbolism and their recognition of, are further enforced by the use of re-interpreted even re-defined typology of earlier church typologies. Although other religious typologies have mad less of a drastic change over the years, they have made use of technology and modern materials to remain current. Moreover, although some designs have shifted from earlier trends, they still maintain the same form, orientation, and religious paraphernalia, which enable them to be easily identifiable as the structures they are trying to represent. In essence, religious structures although they have transformed over the years, still maintain their identity by using or re-interpreting specific typologies or symbols that are indicative of the religions they are intended to represent.

The second typology in question is the automotive industries building typology. Because the buildings have to deal with specific vehicle and exposure requirements, there tends to be a commonality found in all of them. Particular emphasis on this statement will be made in relation to BMW’s headquarters building and their standard car dealerships. Looking at the BMW headquarters’ building, the architect Karl Schwanzer clearly adopted the automobile as a design concept. The architect did how ever make a direct reference to motor
vehicle parts, in that the design of the cathedral is meant to resemble a wheel in a race car, and the main building is meant to represent a four spoke car cylinder (wikipedia: 2010). In relation to the question of identity, this form of architectural expression does pose a secondary notion of achieving architectural identity, in the sense that “is identity also created by adopting a “Las Vegas” type of architecture? Of which the answered can be argued both ways depending on ones views on what is appropriate architecture. However, what is undeniable about the design of the building is that it is overtly of the automotive industry, and is able to articulate that without the use of signage. It is from that view that one can begin to argue the merits of using literal representations to formulate identity, in an architectural manner. Thus in gesture further question the validity of ornamented architecture as an appropriate means of formulating overtly obvious identity.

However, for the purposes of this thesis, one also has to take into consideration the notion that buildings do not exist in isolation, and that although a building may be perfect in itself, what gives it urban credence is its relationship with its surrounding context. Thus, a metaphorical question arises in that in formulating identity architecturally, does ones intervention need to exist as itself or does it need to be a part of a whole in order to give it credence. In answering that one has to return to the primary description of the taxi industry, with the answer simply being a “public transport system” and thus through the nature of the word “public” the intervention cannot exist as its own, but needs to respect its immediate and foreign frames of reference.

Upon reflecting on the principals of both architectural types mentioned in the afore text, one does notice certain similarities, in that: both architectural typologies have an innate architectural language, which displays a tacit exemplification of their program, in that their function/identity is expressed without need or use of signage. Secondly, from an architectural point of view there exists more than one way of expressing identity, being it through the expression of construction methods to ornamentation type architecture. Architecture in itself does not provide a definitive methodology of creating identity, but rather relies on existing perceptions and commonly noticeable symbology to express identity. From that statement, one can then deduce that architecture is subservient to existing identities and perceptions, and in itself is a tool to represent those ideas and
ideals. Accordingly in relation to this thesis a notion that can be carried forward from an understanding of the above mentioned ideals, is that architecture as an enabler can only give credence to a particular idea, if it represents the formative aspects of that idea, and can tacitly express it within its form, program and tectonics.

Architecture and Typology

[Typology is an] approach that isolates the attributes of the architectural coherence, identifies them as characteristics, in order to then compare them with similarly abstracted attributes from other contexts and to define similarities or differences. Since Quatremère de Quincy at the latest the history of architecture has described this kind of approach by the term typology and understands it as the abstraction of formal attributes into a principle, called type, that describes the commonalities of a series of different, but historically concrete models. From the beginning, this systematic and abstracted view includes the possibilities of a guideline for action beyond literal imitation ("imitation par principe") as well as a tool for comparative architectural criticism (Pfeifer & Brauneck, 2008)
Identity of Place

“Social identification leads to activities that are congruent with the identity, support for institutions that embody the identity, stereotypical perceptions of self and others, and outcomes that traditionally are associated with group formation, and it reinforces the antecedents of identification. (Ashforth, E, et al, Mael, F, 1989; 20) This statement refers to people and groups, and forms the basis as to what the implications of social identity are. In referring back to the initial concept of formulating an enriching identity for the taxi industry, one has to further explore the concept “identity of place”. The context, in which any architectural intervention takes place, plays a large role in not only suggesting the architectural language, but in also how it should respond to the surrounding fabric. Therefore, in relation to the taxi industry, the intended site needs to be along a route that has significant importance regarding the industry as a whole, and not just in terms of its modern day perception, but also with regard to its historic value.

“All urban areas have their own logic which derives from their very raison d’etre and from the needs of the people who live there” (Dewar, Uitenbogard: 11). The area around Pretoria station, and Salvakop, is predominantly zoned as a residential, historical/heritage zone and governmental precinct. It for this reason, that it is also the transportation hub of the city of Pretoria. The site chosen for investigation for this thesis is located adjacent Pretoria station, along Bosman and Jacob Mare Street. This location also affords it the proximity to other transport modes such train, bus and BRT, of which all are with in a 200m radius. The proximity to all these transport nodes leads to high pedestrian volumes that move through and around the site. This scenario allows for the manipulation of pedestrian movement through the site, in order to achieve maximum exposure of the intervention, thus enabling more of the public to experience more of the transformations the taxi industry is going through. By locating the intervention near a prominent transport interchange, it allows the taxi industry a larger platform to interact with its stakeholders.
In conclusion, the theoretical investigation explores a number of possibilities in which identity (holistically) can be created, and that architecture in itself does not offer a definitive methodology in which to pursue the quest of formulating identity. Architecture does however serve as a tool in which one can express identity, so long as the architecture implored is indicative and exemplifies the formative principals that pertain to the element in which its identity its trying to represent. Thus in the context of this thesis the sagacious manner in which to achieve its objectives would be through 1: the use of programmatic arrangements to highlight each facet of the taxi industry. 2: To have the architecture relay the narrative of the taxi industry through the use of spatial articulation. 3: Through the use and re-interpretation of architectural typologies that pertain to the transport (more over the taxi industry). The adoption of this methodology should enable one to begin to formulae a quantifiable, visibly expressive identity for the taxi industry. Thus, in essence, the manifestation of an integrated structure that incorporates the industries formative elements into a structured logic, which embody all aspects of the industry, from its social constraints to its architectural manifestation, should sever as the attestation of the strategy adopted.
27. CHAPTER 4- PROJECT DISCRIPTION

FIG 26-Taxi protest
Unlike most professional bodies, or regulatory institutions, which predominantly exist within themselves, and serve as their own validation, the conception of a body to govern the public transport industry would have to follow completely contrary notions of existence. This is because unlike most established associations (e.g. SACAP which are formed through government policies aimed at the protection of architectural rights and the regulation of tariffs and fees) the public transport industry is, primarily geared at the continued, satisfactory delivery of services to the public. It is from this premise that one can deduce that the public transport industry is one that needs to incorporate all stakeholders within its structures in order for it fully reach fruition as a holistic representative body. Further more due to the industries informal, socially orientated nature, it would seem inconceivable for one to separate the general public from the taxi associations in defining the public transport industry as a singular edifice.

In using architecture to formulate an identity, one has to take into consideration the actual and perceived nature of the subject in question, and thus has to engage and fully understand the public transport system. With regard to the taxi industry, the actions of a few are predominantly, judged in the wider context of the industry itself, and thus the actions of few cannot be divorced from the perception of the whole. The creation of identity instills a sense of integrity, respect and generally elevates the perception of the subject as an entity. It is in consequence that one would however; have to incorporate the image of the public (taxi users) with the image of the taxi industry in order to formulate a single, cohesive, symbiotic identity that validates both parties.

Any edifice that is meant to represent the identity of a singular body or organization is socially viewed like the roman domus, in the sense that “its simultaneously home, place of entertainment, business office and lobbying platform” (Hales, S, 2003, 2). From the aforementioned standpoint, it is evident that whatever architectural structure designed to elucidate the social necessity of the taxi industry, would have to consist of all aspect pertaining to the industry as a whole. From this point of view, one can therefore begin to articulate a type of architectural language that can begin to address the lack of formality in the taxi industry.
Design Problem:

The main intention or design problem that the extrapolated brief aims to address, is what philosophical and design consideration have to be taken in order to formulate an architectural language that gives relevance and identity to two uncelebrated parties, who share a similar interest. In so doing, the intention is to create a building typology that both embraces and instills the formality required for a regulatory body, and yet simultaneously acknowledges and validates the informal nature that encompasses the public transport industry.

The second intention or problem would be how does one through, the use of architecture, re-define and re-appropriate a system, which stems from policies of segregation and disempowerment. Thirdly would be the design of a building hybrid that has both functional qualities of formal and informal spatial usage.

Finally, the last problematic aspect of the brief is the context of the intended site. The site is located on the periphery of marabastad, which Due to forced removals and other historic occurrences the area has been left in a derelict, fragmented state. The problem would come in, when trying to conceive a single structure that should have the ability to spark rehabilitation and upliftment of the area as a whole.
Design Intention:

The design intention is to create a precinct, which systematically helps elevate the perception of the public transport industry, by providing it with the structure and formality it so lacks. The objective is to concurrently achieve this in a manner that incorporates its informal social, character with its less known formal body (SANTACO) commissioned to represent it. The method intended to achieve this is centered along the principals of using architecture as a tool to manipulate the systemic process of the taxi industry. The aim is to do so through the provision of an architectural edifice that incorporates the industries formal sector with the programmatic requirements that will enable it to operate at a legally appropriate manner. By introducing operational systems that act in tandem with the informal social aspects of the industry, the design could begin to create a precinct that has the notable formality of a professional institution, but simultaneously has a programmatic tone, that makes it relevant to the public in general.

• The creation of a building typology that aims to house the legislative body of the informal transport industry.
• The design of a building that respects the genius loci of the industry by; staying true to the underlying fundamentals that define the industry.
• The formulation of an architectural discourse that creates identity and credibility for the industry.
• Providing a building that enables the transport system to exist with its stakeholders in a manners that creates a symbiotic relationship
• Improving the efficiency of the taxi industry, through automation and centralized exchanger points
Client

The chief client identified for the daily running of the development would be SANTACO. Santaco would use its capacity, as the recognized regulatory body to manage, gather and guide the other Pretoria taxi associations from this node. As the building is, intended to represent a formal aspect of governance, there would also be input from governmental institutions such as the department of trade and industry, and the city of Tshwane. In order to help facilitate the commercial aspects of the development, further subsidies would be received from the department f trade and industry, along with other government bodies geared at poverty eradication through social empowerment.

Secondly, all nominated suppliers of taxies by the taxi recapitalization program would also have a stake in the building, as it would also provide them with a platform to market their products.

Other members that would use the building include:

All stakeholders of the Pretoria public transport systems, this would include:
- Menlyn Taxi association
- Boschkop Taxi association
- Mabopane Taxi association
- Attregvile Taxi association
- Privately owned taxis

TAXI REGUATORY BODY
Program

The regulatory body of the taxi Industry, namely SANTACO, including:

- Offices
- Boardrooms
- Public debate platform
- Seminar rooms
- Inspection garages

The public interface between the public and the regulatory body

- Public Liaison offices
- Training facilities
- Retail & Informal markets
- Public open square

Transport interchange precinct

- Hotel accommodation
- Taxi service centre
- Taxi parking zone
- Taxi rental
- Taxi wash points

FIG 30, Department of transport logo
CHAPTER FIVE
PRECEDE
ENCE

STUDY

BMW WELT
BRITISH AIRWAYS HEAD
QUARTERS
“Ever since Le Corbusier liberated the roof of the Unité as a landscape from its singular significance and function as a mere protective element, and ever since Oscar Niemeyer completed the design of his single-family dwelling Casa das Canoas near Rio de Janeiro, we have understood that the roof of a building need not necessarily follow its basic layout and structure. Rather, the “roof” has taken on a new meaning, new significance in modern architecture.” Wolf D. Prix

The design of the building complex enables all of the structures, to take the form of a walk-through sculpture in an urban landscape that is overarched by the virtually free-floating roof that originates out of the Double Cone and further differentiates the space into various sub-areas.

The most prominent elements of the brand experience and automobile delivery center BMW Welt are the roof and the Double Cone. The roof landscape of 16,000 square meters, supported by only 11 columns, not only forms the space-enclosing upper limit of the building, but also forms a functional, structural, and above all formally independent structure, in conjunction with the Double Cone.

The Double Cone visualizes the soaring dynamics of the building with its continuous transition into the seemingly floating roof. It takes the form of two leaning truncated cones with a rounded transition between them.

The building is sustainable through innovative climatic concepts which result in an
estimated 30 percent energy savings. Included in these ideas are the naturally ventilated hall with facade construction that may be heated or cooled as well as the photovoltaic roof panels which provide energy. But not only is the climatic concept sustainable; the form is sustainable as well.

At the heart of BMW Welt is vehicle delivery, which forms both the spatial hub and the functional backbone of the building, and the processes connected with this function extend over almost all levels.

The new vehicles are delivered to the lower floors via their own loading yard. Here there are car washes, mechanic’s workshops, final paint inspection sites and final cleaning sites as well as a one-day storage facility, an automatic high-rise storage unit with a capacity for 250 cars. This corresponds to the maximum daily capacity of the vehicle delivery process. The delivery and end-finish process takes place hidden from customers and visitors on an underground stage. The vehicles are then transported in transparent glass elevators to the actual delivery stage, dubbed “Premiere,” which is at the center of BMW Welt, visible from all other areas. This area is also known as the “Marina” since the vehicles are handed over to customers on rotating platforms, from where they can drive out of the building via a generously sized ramp.

Although BMW Welt is basically a public building, certain areas are open exclusively to those picking up new vehicles. For example, at the main entrances to BMW Welt customers can check into a hotel and enjoy exclusive use of two Lounge levels.

The “Lounge” is integrated into the roof and thus virtually suspended over the delivery area, supported only by the utility service shafts and a column. The necessary formalities
for vehicle hand-over are taken care of in the Lounge, which also contains common areas where guests who have arrived from far away can withdraw and rest. Via a gradually descending stairway connecting the Lounge to the Marina, the customer is guided by a customer service representative to the actual hand-over point. In this process the melding of interior and exterior space or suspension of the usual separation between them also becomes tangible on the functional level.

The “Forum,” located in the north wing of the building, represents another key function of BMW Welt, this section embodies in a particularly striking way the concept of spatial and visual integration coupled with the highest degree of functional independence. The “Tower” in the southwest, looking toward the Olympia Park, represents a multifunctional area in the fullest sense of the term. Just like the Forum, it offers both encapsulated interior rooms with sight lines out into the Hall and toward the Olympia Park as well as walkthrough surfaces and terraces both indoors and outdoors.

Inside BMW Welt, all publicly accessible areas, such as the Forum, Tower and Double Cone, are connected by a lightweight, sweeping bridge structure. In order to eliminate columns in the interior, the bridge was hung from the ceiling instead. At defined panorama points, curving bulges in the bridge invite guests to pause and take in the scene.

The functional and formal concept of the bridge is extended out over Lerchenauerstrasse and thus to BMW areas situated on the opposite side of the street (administration headquarters and museum), so there is no intersection with the vehicle traffic down below.

Special attention was paid to the underground networking of the various structures, so that it is possible to provide catering and supplies to the entire building from all restaurant units. The four-story underground base of BMW Welt also contains two public parking levels with up to 600 parking spaces. Access to the Hall is gained decentrally via 16 elevator groups.
When British Airways had the opportunity to build their corporate headquarters in parkland near Heathrow Airport they seized the chance to make a quantum leap forwards, to a new way of working. The building needed to house over three thousand employees and be the physical launch pad for business success well into the twenty first century. One of the objectives of this building was to create a base from which people can better team work using flexible workspaces and the latest communications. To help achieve this British Airway identified feng shui as one of the ideologies that could be incorporated into the design process. The building itself had to support new ways of working together and more effective communication. To achieve this and provide maximum flexibility, the workspaces are all open plan. Even Bob Ailing, then chairperson, worked in an open plan environment. BA found that humans work most effectively in teams of four to eight people. Therefor the open plan areas were set up to work in teams of six to eight people. The chief architects’ Niels Torp and Øyvind Neslein had begun to design the building in way that incorporated many of the fundamental feng shui principles. Coming from Norway where sun light is particularly important during the dark winters, they had carefully considered how each part of the building would benefit from natural light. They created the idea of building twelve separate houses connected by a main street so that each part of building receives plenty of natural light along with beautiful
views of the parkland. Every part of the building has a bright sunny atmosphere. The Street that connects the twelve main office spaces is a wide pedestrian walkway covered by a glass roof. In the street are cafes, restaurants, bank, shops, meeting rooms, library and main reception area. All this is surrounded by parkland with lakes, trees and paths.

The following are positive Feng Shui features of the British Airways Waterside building. FENG SHUI AND LOCATION Not in the shadow of another building. The site is fortunate in that the building is not in the shadow of any other taller buildings which would lead to a deficiency of energy as the sunlight would be denied to the part of the building in the shadow. The whole building has good exposure to natural light and is therefore charged by all the different kinds of energy generated by the sun as it moves through the sky. FENG SHUI AND PARKLAND Surrounded by more natural healthy energy. The parkland surrounding the Waterside building will generate its own energy. The trees, bushes and grass will radiate a natural, organic energy which will drift through the Waterside building. This helps maintain a more natural healthy energy in peoples own bodies. Research in hospitals has shown that there is an advantage to being in bed close to a window with view of a natural landscape. There appears to be a psychological benefit to being able to see the kind of landscape that has the air, water and food we need for life. The Waterside building has been cleverly designed to ensure that everyone has views of the parkland or the courtyards between the houses.
The Bree station, or metro mall taxi rank was commissioned to cater for a transport and trader terminal in a people-friendly way, by providing spaces to traders which allow them to maximise the passing trade. It is known as the only shopping centre in Joburg without car parking, but with several floors of minibus taxis. Approximately 150,000 people pass through here per day on their way to and from the city centre from Soweto and the suburbs.

The building has been created to be hardwearing and low maintenance, using robust materials like red face brick and concrete finishes. The building is three stories tall, and is designed to accommodate 25 buses serving 35 different routes, with holding facilities for 2000 taxis, servicing an estimated 100 000 commuters.
METRO MALL RANK

There is space for some 800 traders, inside the building and along the ground floor exterior in Bree and Sauer streets.

The buildings double volume entrances, which are decorated by local artists in mosaic and tall wooden sculptures, act as “collection baskets” to draw people into its interior. With this building, the architects strove to create a mixed use structure that blends with city buildings in the vicinity, allowing easy access and freedom of movement inside the building. The building has also turned a rapidly deteriorating side of the city into a vibrant, people place, at the same time providing a formal home for both taxis and traders.
BMW WELTS
Interpretation of identity through image and branding

The BMW welts building, from a programmatic and iconic point is an appropriate precedence in the sense that in light of the afore mentioned theoretical component of this thesis, the building incorporates all facets of the automotive process into a single structure. This notion has particular significance in relation to identity formulation and recognition. Secondly, the design of the building dramatically uses imagery and branding in order to further convey the notion of identity for the BMW brand. In light of the principals of identity design, the architects have followed both methodologies recommended for the creation of a structure that tacitly conveys identity.

BRITISH AIRWAYS
Expression of institutional ethos through architecture

The brief of the B.A building was to create a building that not only managed to house the 3000 employees, but also simultaneously embody the institutional ethos of the B.A brand. The design had to be the enabler of the organizations operational requirements from its daily running to its organizational psychology. In essence, the building had to be the manifestation of the company’s identity, not from a marketing view, but from an operational view. Thus in relation to this thesis, this design serves as an example of how architecture can be used to represent the ethos or defining culture of an organization. It further explains how identity does not only need to be created through imagery or branding, but can also be expressed through spatial and cultural articulation.
INTERPRETATION

METRO MALL
Programme and expression of urban transport architecture

Metro mall taxi precinct along with Bara taxi rank, serve as a new building typology for transport architecture in the new South Africa. The two buildings for the first time display a direct intent from the designers and commissioners to incorporate and align the informal economy with that of the public transport systems. These designs show the realization of the interdependence between the commuter public and the transport systems they utilise. In essence, it can be argued that their presence indicates an emergence of new definition of a “home” (SouthAfricainfo.co.za, Davie, 2005) for the public transport systems, namely taxis and busses. Thus, it can also be said that the designs of these buildings represent an acknowledgement of the importance of the informal economy as well as the taxi industry. For the purposes of this thesis the metro mall precinct was examined due to its city context. The building’s relevance as precedence is, further highlighted as the building also elucidates as to how the programmatic and urban transport architecture should be expressed.
CHAPTER SIX

45. CHAPTER 6- CONTEXT ANALYSIS
CONTEXT ANALYSIS

CONTEXT
CITY
FRAMEWORK
SITE ANALYSIS
Context:

Pretoria city is, predominantly viewed as a rigid, historically relevant, governmental city. Due to the fragmented nature of its growth of late, the city has also become synonymous with descriptions such as historic centre of commerce, low cost housing and transportation routes. This view disenables the city from fully taking advantage of its central character, as it only caters for the formal, mundane aspirations of its users. In order for the city to become a complete centre for sustained human settlement, it has to engage with all the needs of man including his marginal and experiential pursuits. By exploring, the capricious nature of man in conjunction with his more stringent aspiration, one could begin formulating the underlying principals needed to create a central zone geared at fostering social interaction and racial integration.

Systematically the city can make great steps in curbing the fragmented nature of the growing Tshwane, through the creation of a social realm within the city, which is designed to simultaneously address both formal and informal pursuits of the user. In so doing the city can become the holistic incubator, it needs to be, to redefine itself as the social nucleolus of Tshwane.
In following suit with the capital status, that Pretoria holds, the CBD can in turn become the central transport node in which all registered and unregistered taxi associations culminate. This sentiment is, further enforced by the condition that the city currently holds as the central point from which a commuter would need to be in order to get to any other point within the greater Tshwane region.

**Site Address:**

The site is located on the corner of Bosman, Jaco Mare and Scheiding Street.
**STUDY AREA**

The study area of the design is located on the corner of Bosman Street and Jaco Mare Street. The area is located next to Pretoria station, the CBD, and sits adjacent to Salvakop. The situation posses a number of possibilities in the sense that directly adjacent to the site sits three different types of urban fabric. There is the City fabric, which is represented in the northern part of the study area, which has a number of high-rise buildings, with definitive street edges, then there is Salvakop, which lies to the south. This area is predominantly single story, and then there is the transport precinct (Bus, taxi and train), which surrounds the site. The design of the building would need to respond to all these conditions in a manner that gives credence to the scheme as a whole. The size of the site is also important, as there will be a need to further partition the site and zone new buildings that will compliment the scheme as a whole. The scale of the scheme will have to act as the buffer zone, or transition space between the three contrary fabrics of the CBD, Salvakop, and the transport nodes.
The following images represent the view from the northwest and southwest perspective of the site. The image indicates the shadow study in the morning periods, as well as the massing of the buildings that fall within the study area.
STUDY AREA

WEATHER CONDITIONS

Pretoria is located in the northern edge of the Gauteng province, approximately 1 370 meters above sea level. The city is further firmly nestled within the valleys of the Magaliesburg mountain range. This location lends it to the following conditions.

RAINFALL:

Like most of Northern South Africa, Pretoria has experiences summer rainfall patterns, with a majority of its rainstorms occurring in the afternoon periods. The winter seasons are primarily moderately cold yet with sunny skies.

The city receives an estimated 700mm of rainfall per annum.

TEMPERATURES:

The average summer temperatures range from 15°C - 28°C.

The average winter temperatures from 6°C - 23°C

WIND:

The predominant wind directions are as follows

Summer: East-North to East-South-Easterly

Winter: South Westerly

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</tr>
<tr>
<td>October</td>
<td>27</td>
<td>14</td>
</tr>
<tr>
<td>November</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td>December</td>
<td>28</td>
<td>17</td>
</tr>
<tr>
<td>Year</td>
<td>25</td>
<td>12</td>
</tr>
</tbody>
</table>

FIG 66- Annual wind direction

FIG 67- Annual rainfall patterns
City of Pretoria Transport nodes
Pedestrian and Vehicular movement

FIG 68- Taxi Routes through city

FIG 69- Taxi Ranks in city

53. CHAPTER 6- CONTEXT ANALYSIS
CITY ANALYSIS

FIG 70- Pedestrian movement

FIG 71- Bus stops
Pretoria Station and Salvakop
Link Framework

FIG 72- Framework Image

Focus Area

Government Buildings
Taxi Rank/Site
Train Terminal
BRT Station
Brown Field Site
Residential
NAZM Offices

FIG 73- map of City of Pretoria

55. CHAPTER 6- CONTEXT ANALYSIS
FRAMEWORK

LINK
framework linking Salvokop with the city

Functional Mapping

FIG 74- map of City of Pretoria
Green Edges
The introduction of green areas along the intervention area, increases pedestrian comfort, thus further pedestrianising the streets.

Massing
The intention of the framework, is to increase the density of the cityscape. By increasing the density, the city allows for greater access to amenities, and for the better use of services.
Objectives

- Densification of open unused land along the train station periphery
- Create links over the train tracks, to improve connection between town and Salvakop
- Activate the edges along the train track, by introducing activities along the perimeter of the tracks
- Establish special relations, between transport hubs, and pedestrians
- Increase parking area
- Activate small alleys
- Focus area to become gate way between town and Salvakop
- Address the backs of buildings
Existing Conditions, and Proposed Additions

FIG 78- Panoramic View of site

FIG 79- Ariel View of Site

FIG 80- City Entrance to site

59.  CHAPTER 6-  CONTEXT ANALYSIS
SITE IMAGES

FIG 80 - City Entrance to site

FIG 81 - Corner View of Site
COUNCIL PROVIDED SITE INFORMATION, & CLIMATICS

FIG 82- Council site information
FIG 83- Council site information
The Site, has three prominent nodes, the first is the north corner, which is the first contact point for people coming from the city. The second is the train station end, which is the entry and exit point for commuters coming in and out of the city via train. And lastly, is the taxi rank end, which is the contact point for commuters who use taxis to come in and out of town.
the images shows, the major transport nodes around the site, and their respective entrance and exist. The image further depicts how pedestrians move to and between the different transport modes.
CHAPTER SEVEN
DESIGN DEVELOPMENT
CONCEPT
DESIGN DEVELOPMENT
SITE FRAMEWORK
When formulating a concept, which is intended to instill upon the taxi industry, a new identity, the first course of action would be to decipher exactly what the taxi industry was and meant to its daily users, and stakeholders. The manner in which to do this would be to follow a qualitative research methodology where strategic questions would be asked to all pertinent parties involved in the industry. Once a tangible conclusion was reached from that, the next course of action was to follow the prescription of the theoretical research, in defining what methodologies one should use in formulating identity. In so doing, one would have both the tangible, metaphorical, and pragmatic meaning of the industry in conjunction with the theoretical backdrop of identity formulation. Both of which, when used simultaneously can be used to conceive a coherent inclusive identity.
In beginning to understand what the taxi industry is, one has to negate its current one-dimensional perception, of it primarily being a renegade public transport system. Instead, one has to adopt a holistic approach, which incorporates not only its current perception, but also its allegorical meaning. In essence, one would have to find a meaning, which would still hold true, if all taxis where to conform to operational norm, and taxi drivers where to obey road rules with in a day. It is only once one has this un-wavering, meaning, can one then begin to formulate a new identity for the industry.

To begin one has to look at who the taxi industry primarily caters for, and what significance the industry has to that segments life. The first impression one would have is that it serves as the primary transport mode, but to attribute mean to that one would have to understand what having that transportation means to its users. Being that the taxi industry principally caters for the lower income bracket/ working class members of society, its is feasible to assume that the industry also serves as an economic enabler to that demographic. So other than just a transport mode, it is also what enables its users to move from their private lives to the public lives and vice versa. From that analogy, one can then deduce that the taxi industry represents the journey one has to undertake from public to private, disenfranchisement to economic opportunity ect. Thus, in conclusion from this correlation the formulation of identity of the taxi industry would have to represent its inherent meaning of journey.
Origin of Concept

CONCEPT GENERATOR 2

The second approach in formulating an interconnected concept for formulating identity would be to follow the prescriptions dictated by the theoretical research done earlier on in the document. Because this thesis primarily deals with attributing meaning to a social construct, one has to follow a method that incorporates both social identity theory, and architectural typology. The resultant ideology should then be the summation of the two doctrines, and should clearly be able to illustrate how architecture can be used to formulate, quantify and even articulate identity.

As stated in the theoretical component of this document, the method in which to formulate identity is to structure the identifying elements in a manner that is indicative of the entity they are intended to represent. In the case of the taxi industry the modus operandi to implement in formulating identity is through the re-appropriation and re-defining of its formative, expressive and operational elements.

In order to give credence to the concept and the theoretical response, one has to express the resultant product in an architecturally expressive manner. The manner in which architecture could give meaning or identity to the industry is in three ways. Firstly, it is through a programmatic response that exemplifies the factions of the industry. Secondly, the architecture would have to express the narrative of the taxi industry. Finally, the architecture would have to represent the re-appropriation if the current typologies associated with the taxi industry. In so doing one can immediately begin to associate the structure with the industry, as it will comprise of all the attributes of the industry, thus formulating a new identity.
DESIGN CONCEPT

FACET INTERACTION

FIG 91-interaction between three facets of the industry

SOCIAL CONNECTION

FIG 92-Conceptual link journey plays

TYPOLOGY RE-APPROPRIATION

FIG 93- re-using typology in order to formulate identity
**DESIGN GENERATORS**

**LOCATION OF MASS GATHERINGS**
- Pedestrian Gathering
- Taxi Gatherings

Image indicates where along the site, pedestrians and Taxis aggregate.

**PEDESTRIAN MOVEMENT**
Image indicates the conceptual movement of pedestrians before the site had been fenced off.

**CONCEPTUAL MASSING**
Image indicates the conceptual Massing of what the intervention might be, if it had to respond to the current urban fabric.
Image indicates the conceptual movement of taxis, as they would be required to interact with the site. The movement represents the conceptual notion of having the taxis be programmatic part of the building.

**PEDESTRIAN MOVEMENT**

Image indicates the conceptual movement of pedestrian before the site had been fenced off. The image also represents how pedestrians move through the adjacent taxi rank.

**CONCEPTUAL MOVEMENT**

Image indicates the conceptual movement of people between the suggested massing. The movement would represent an interactive program.
Movement, massing and interactions between programatic spaces

DISPLACEMENT THROUGH SITE

The following image indicates the conceptual displacement of pedestrians from the taxi rank into the site. By spreading the program, one can activate the whole site.

FIG 100- Dispercement Through site

SPATIAL ARTICULATION AROUND NODES

The image represents the need to activate nodes and buffer zones between primary programatic areas. In so doing one gives credence to all left over spaces.

FIG 101-Activation of Nodes

INTERACTION BETWEEN BUFFER ZONES

Image represents the intention of having programite activites along major edges on the site. The intention is to improve social interaction between the site and its surrounding context. buffer zones would be used to active intermediate spaces.

FIG 102- Interaction of buffer zones

73. CHAPTER 7- DESIGN DEVELOPMENT
The initial concept originates around the idea of incorporating the taxis metaphorical home (being the road) and including it in the design of the building. The intention was to allow the taxis to become part of the program of the building, and since the idea was to instill identity for them, allowing them full access to the building would do this.
The second concept was centered around two conceptual ideas, the first was to emphasize the notion of the taxi being the primary user of the building, thus enabling taxis to move vertically and horizontally through the building, the second was to increase the general public’s passive involvement in the ongoing of the taxi industry. The scheme’s flaw was that it did not spatially link the formal aspect of the industry with the informal aspect. The third concept followed the same principals, but lacked the identifying elements or architectural gestures that would give the building the sense of identity. In essence the building did not represent the industry, but rather could house any program.
Interpretation after Digital design strategy

FAILURES, SUCCESSES

In the beginning the entire design process from concept generation to initial design, was completely computer generated. The process had the following positive and negative aspects

Process

Successes:
- Efficiency in time management in relation to work input and output.
- Computer generated images allowed for easier 3D representation of scheme

Failures:
- Lacked the design fluidity of hand drawings
- Led to the design process being rushed
- Critical conceptual stages were missed

Design Orientated

The positives that could be drawn from the digital investigation, was that in order to better achieve the goals set out in the design brief, is that the design would need to articulate the three facets of the industry better. There would have to be a more coherent articulation of the programmatic spaces, in order to give credence to the design as a whole. Further, more the idea of identity needed to be explored more through the articulation of not only the programme, but also through the architectural expression. The design of the building would need to implicitly represent the taxi industry and not just serve as a building that could in all certainty serve any programme. The digital experience led to a new investigation of how the building should not only respond to the brief, but also its context. The greatest differentiation between the digital process and the proceeding design process was the architectural language response to the brief.
The above represented models represent the design investigation after the digital period of the design development. The building’s form is intended to signify a move from the previously rigid and orthodox form of the previous design. The change of from is symbolic of the fluid nature of the taxi industry, is meant to highlight the main primary social spaces, and the linkages between them.
NEW SITE ANALYSIS

SITE FRAMEWORK 2

FIG 118- Movement around site

FIG 119- Activation points

Transport Nodes
Government
Retail Commercial
Mix use
Entertainment
Industrial
Pedestrian Movement
Vehicle Movement

Nodes
Site Entrance
Live Edges
Major links
Dead Edges

CHAPTER 7- DESIGN DEVELOPMENT
SITE DESIGN, stage 2

Opportunities
- Activate the edges
- Emphasize prominence of the nodes
- Activate links
- Introduce green/pause spaces
- Re-activate dead spaces
- Densify the site

FIG 120-Opportunities

Possibilities
- Consolidate links
- Define entrance
- Activate edges
- Define social spaces
- Open vs solid space

FIG 121- Patterns
Massing and Interactions

FIG 122- Zoning

Informal Market
Semi public/ commercial
Public/ Retail
public square

FIG 123- Zoning

Pedestrian movement
Densification
Public space
Entrance and gathering

81. CHAPTER 7- DESIGN DEVELOPMENT
The site has been divided into three segments, all of which deal with its surrounding context. A new walkway and road has been introduced to bisect the site, to allow for better accessibility and permeability through the site. The site and the new proposed buildings are arranged in a manner that allows for the creation of public squares and interaction points.
In beginning the new site layout, the first course of action was to look at the surrounding context. The intention of which was to have a building that responded to its surroundings in terms of scale and language. The challenge was finding the median between the left flank of the site, which is single story, and the right flank, which are 3 to 8 stories high.

The buildings represented in red, are intended to be supplementary buildings that emphasize the site as a taxi precinct. Their program would be a taxi wash bays, and parking bays, as well as accommodation. To the north west corner is a service station, which serves the adjacent taxi rank.

The buildings in purple represent the form of the design intention. The form is primarily derived from a need to maintain the urban city language and to frame the site. The form allows for maximum interaction with the street edge, thus further enabling the buildings social program.
The orange dash, dotted line represents the primary pedestrian movement along and through the site. The movement is derived from the linkage of primary transport nodes, ease of movement, and existing pedestrian movement. The design responds to the movement patterns.

The blue line represents the existing taxi movement past and into the site. A secondary route has been proposed at the rear of the design, to allow it access to parking and service bays. The pink bars represent market areas which have been located along the major movement areas.

The last image represents the culmination of all the design intentions that have been considered. The remaining space on the site is intended to serve as a public spill out or quart yard space. The space links all the programmatic facilities on the site, and acts as the major public collection space.
Design Response to existing conditions around the site

**PADESTRIAN SCALE**

The design takes into consideration the human scale, in relation to its surrounding, the concept was to create a space that acted as a transition space between the different fabrics around the site.

**STREET CLARITY**

The conceptual idea was to create a visually transparent building, in which all its activity’s could be passively vied by the public. The intention was to create an inviting building.

**GATEWAY RESPONSE**

The building acts as both a gateway/transition building between the city and the major transport nodes around the site. Secondly, its form is intended to respond to its surrounding context.
DESIGN INTENTIONS

BUILDING HEIGHTS

The site is surrounded by a disparity of building heights. On the north west corner the site needs to respond to building heights of up to 18 stories, whereas the surround buildings do not exceed two stories.

FORM RESPONSE

Conceptually the building is meant to respond to its context as well as maintaining its own logic derived from the principals of formulating identity.

PROMINENCE OF ROOF AND FLOOR

In following the principals of transport architecture, and re-defining existing typologies pertaining to the taxi industry, the conceptual form is derived out of a need to emphasize the prominence of the floor and roof plains. The floor determines where programmatic constraints occur, while the roof acts as an encapsulating member which houses them all, without being influenced by the program...
CONCEPT 5
The design of the fifth concept begins to address the city fabric, by aligning its programmes along or near major movement routs. This articulation does formalize the form of the building, and acknowledges the stipulations of urban design. The building does begin to bring together the facets of the industry, being the formal, informal, and user. The design does revert to the initial idea of having the taxi being able to enter the building.

CONCEPT 6
The sixth concept expands upon the fifth concept by further refining the programmatic articulation, and further defining the social spaces. The design rethinks the idea of having the taxis being able to penetrate the building, as well as the idea of having a taxi show room. The design does however develop the idea of representing the taxi history through the introduction of a memorial space, which exhibits the history of the
CONCEPT 7

The seventh concept expands upon the six by introducing a roof structure that covers the building as a whole; the roof structure serves as the unifying element that links all aspects of the design, and its form is intended to represent a re-interpretation of transport architecture. Conceptually the design represents transport architecture in the sense that it has a roofscape that allows all functions to happen freely underneath it. The ground plane articulates the movement independent of the roof, and allows for the prominence of certain social spaces.

industry. The biggest flaw of this design and previous concepts is that it does not have a singular architectural structure that physically links all the facets of the industry. Furthermore the roof structure was too fragmented and could not represent a unified identity.
3D CONCEPT MODEL

FIG 149-Corner entrance

FIG 150-Northwest perspective

FIG 151-birds view
CHAPTER EIGHT

CHAPTER 8- TECHNICAL INVESTIGATION
TECHNICAL INVESTIGATION
DESIGN SYSTEMS
PASSIVE SYSTEMS
MATERIAL STUDY
CHAPTER 8- TECHNICAL INVESTIGATION
Services, Circulation, Ducts and floor area

FIG152-Basement Plan

Floor Area
Foyer Space
Service Rooms
Vertical Circulation
Water Storage/catchment
Service Ducts

FIG 153- Ground Floor

95. CHAPTER 8- TECHNICAL INVESTIGATION
WATER SYSTEMS

Rainwater harvesting
Output: Roof Area X average rainfall
        = 4615m² X 0.674m (Weather SA, 2009)
        = 3110.5 m³

Comments: The basement structure is fitted with two water storage compartments which are attached to a pump system, thus the collected water could be used for two purposes.
1). The water could be pumped to a filtration system and used in the ablution facilities
   o Dual flush system uses 3l (light setting) or 6l (heavier setting)
   o Conventional toilets use 11-15l per flush
2). The unfiltered water could further be used to irrigate the site and adjacent buildings in time of plenty.

Water Storage
The water harvested from the roof will be stored in two storage rooms in the basement. The storage tanks (hydrodynamics nel range) will be joined together by an underground gravity pipe, in order to regulate the levels of both tanks. The tanks will further have a pump system, attached to a filtration systems, that will pump the water to the needed areas, (ablutions, irrigation).

<table>
<thead>
<tr>
<th>Rainwater harvesting</th>
<th>Building usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>Type</td>
</tr>
<tr>
<td>14 000 L</td>
<td>Water</td>
</tr>
<tr>
<td>Estimated usage</td>
<td></td>
</tr>
<tr>
<td>Average hot water consumption:</td>
<td>Toilets/urinals: 8L/ per flush X 37 toilets/urinals X 8 uses/D</td>
</tr>
<tr>
<td>Hand basin 1 liters</td>
<td>= 2368L</td>
</tr>
<tr>
<td>Kitchen sink (per wash-up) 6 liters</td>
<td>= 71040 L/ month</td>
</tr>
<tr>
<td>Dishwasher 14 liters</td>
<td>1mm of rain x 1m² of roof surface</td>
</tr>
<tr>
<td>1 person + household 120l</td>
<td>= 1 liter</td>
</tr>
<tr>
<td>Washing of floors/sores: 50l</td>
<td>4615m² X 674mm (weather SA)</td>
</tr>
<tr>
<td>Toilet: 8L per flush.</td>
<td>= 3,110,510 L (potential collection/ year)</td>
</tr>
<tr>
<td>Showers: 36l per person</td>
<td>3,110,510/ 12 months</td>
</tr>
<tr>
<td></td>
<td>= 259,209 L/month</td>
</tr>
</tbody>
</table>

The basement has sufficient space to hold 12 14000L storage tanks, with total storage capacity of 168000 L per month.
Radiant cooling

Radian cooling systems are energy and material efficient systems (Cunniff, G, 2009). Compared with air systems, radiant-cooling hydronic systems use approximately half the horsepower and materials to move heating and cooling energy within a building. The system consists of Low-flow injection-pumps, which deliver heating and cooling energy to terminal units.

Pros:

- Radiant chilled ceilings consist of metal panels with hydronic tubing attached, where chilled water is circulated through the panels to produce radiant and convective cooling. (Cunniff, G, 2009).
- Approximately 50 to 60 percent of the heat transfer from a radiant chilled panel is radiant, while 40 to 50 percent is convective.

COOLING

From a central pump system, cold water is pumped through coils to the top of the ceiling panel. The underside of the ceiling panel is cooled which in turn cools the air against it. The panels then absorb the heat, which radiates from the room. The air above the panel is cooled and cool air moves around the edges to the rest of the room.

HEATING

The warm water that is pumped through copper coils to the top of the ceiling panels enables the ceiling sail to act as a radiant heater. The panels heat the air above and below the panels, and circulate it around the room. The system is very effective over large areas, and thus reduces heating and cooling energy consumption.
Sun Control

The building uses a series of cantilevers from the roof, to the slab, in order to minimize direct sun penetration into the building. Recessing the building facades on the lower floors compounds this system, as it takes into consideration the sun angles during summer months.

GKD steel mesh is used in the exterior and interior of the building for a number of reasons. These include: its excellent corrosion resistance, long-term durability, high fire resistance, and low maintenance. The material also works well as a sunscreen device as it is able to keep out harmful UV rays depending on the density of its weave. While keeping out harmful rays, it also enables an unhindered view out of the building.
The public component of the building uses passive heating, cooling, and ventilation systems to regulate its climate. The following principals are adopted in the design.

**Thermal mass:**
The building design exposes the hard mass of its structure in order to increase heat gain during the day, and radiate it off during winter, and at night.

**Recessed façade:**
The faced sits under an extended roofline, in order to protect it against harsh north light, but allows for heat penetration in winter due to its lower angle of entry.

**Natural ventilation:**
The south façade is open to the courtyard where wind is able to permeate and move through the building.

**High floors:**
The design uses high floor to ceiling ratios, in order to allow all the warm air to collect above head height, and thus disperse through openings.

**Insulation:**
The building envelope is insulated to reduce drastic heat gain and loss.
CLIMATIC SYSTEMS

THERMAL MASS
The building uses thermal mass to radiate off heat on cold winter days, the depth and thickness of the slab help in heat retention.

RADIANT COOLING
Radiant cooling is used in the ceilings of the office areas and in the floors of the rentable offices. It is used to cool down the building instead of the air.

CROSS VENTILATION AND STACK EFFECT
Cross ventilation is used in conjunction with radiant cooling for climate control. The stack effect also helps in air circulation and replenishment.
In light of the precedence and typology, study conducted throughout the body of this thesis, the materiality of the building should not only be indicative of the taxi industry, it should also be adaptable enough to express all three facets of the industry. In consequence, to the identity of the industry being formulated by the articulation of both formal and informal attributes of the industry, there is a need for the use of a combination of materials. This will ensure that both parties receive their thermal, acoustic and durability requirements. The intention however is not to create a cacophony of materiality, but rather to have base materials that are expressive of the industry which are in part complimented by a second layer of materials that supplement their function.
In light of existing typologies associated with the taxi industry, the base structure will compromise primarily of concrete columns, beams and composite concrete floors. Secondly and in response to the conceptual notion of transport architecture being articulated as primarily roof and floor architecture, the roof structure will also be part of the primary structure. The material to be used for this will primarily be constructed of steel, with steel support structures.

A steel frame structure will be attached on to the base concrete structure, and will serve as the secondary structural system. This system is intended to represent the fluidity and lightweight nature of the public facet of the industry. The incorporation of both systems is intended to further represent the existing typologies, thus further instill the sense of identity. A third layer of materials will be used in the office component of the structure, and in order to respect, the formal conditions need to run an office appropriately.
PRIMARY STRUCTURE

**Slab and column**

In light of existing typologies associated with the taxi industry, the base structure will compromise primarily of concrete columns, beams and composite concrete floors. Secondly and in response to the conceptual notion of transport architecture being articulated as primarily roof and floor architecture, the roof structure will also be part of the primary structure. The material to be used for this will primarily be constructed of steel, with steel support structures.

**Concrete with a screed finish**

Concrete with a screed finish is commonly used in the construction of most transport structures, for its durability and low maintenance properties. It is for this reason that the material will be used in the construction of this structure. It will form part of the primary structure as to further enforce the notion of typology and thus play into the creation of identity. By in large the concrete will be exposed, as a truth to materiality is an important facet to maintaining the perception of fluid architecture.

**Structural infill**

In Staying, true the concept of truth to materiality, exposed brick, or face brick will also be used in the construction of the building. The fact that no plaster or paint is required to finish of the product also adds to its sustainability and low construction costs. Other advantages include: low water absorption, naturally fire-resistant, excellent acoustic properties, superior thermal insulation, Environmentally friendly, (low carbon footprint), (www.ocon.co.za: 2010)

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**FIG 173-Concrete Frame**

**FIG 174-Concrete Structure**

**FIG 175-Colonial Red**

**Specification**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brick Strength</td>
<td>Average 30 MPa</td>
</tr>
<tr>
<td>Water Absorption</td>
<td>Approximately 11%</td>
</tr>
<tr>
<td>Efflorescence</td>
<td>Nil to slight</td>
</tr>
<tr>
<td>Dimensions</td>
<td>220mm x 100mm x 70mm</td>
</tr>
<tr>
<td>Mass</td>
<td>Average 2.6 kg</td>
</tr>
</tbody>
</table>
Steel

A steel frame structure will be attached on to the base concrete structure, and will serve as the secondary structural system. This system is intended to represent the fluidity and lightweight nature of the public facet of the industry. The incorporation of both systems is intended to further represent the existing typologies, thus further instilling the sense of identity. A third layer of materials will be used in the office component of the structure, and in order to respect, the formal conditions need to run an office appropriately.

Steel I sections are used in the construction of the walkways and pergola areas; they are also compliment by GKD mesh, which is used as a screening device, as well as a media screen. As the usage is primarily in the square area, the device could be used to supplement the income of the building. The I beams are coated with a fire proof paint, and further with a dark grey paint, as to reduce heat gain.

In parts of the design, steel is used as floor covering and as a shading device. For this purpose, steel grating is used, in order to give of the sense of a floating lighter structure. Other advantages are that the it is permeable allowing for visual, air and light penetration. Because it only allows partial light in, it can also be used as a screening device.
INTERIOR MATERIALS

Metal mesh
Not only will the mess be used outside due to its sun shading - reducing heat load, cooling requirements and ultimately energy consumption. But will also be used in the interior of the building. The mesh will be used as cladding on the walls and as part of the ceiling. The aim is to create a robust industrial feel, which is synonymous with the transport industry. Cambridge Solucent metal fabrics deliver striking visual appeal, increased comfort, and most importantly, energy savings. (Archiexpo, 2010)

Polished screed
Benefits:
- Smooth finish
- Durable material
- Thermal properties

UV RESISTANT GLASS
Smartglass Solarshield is a glass with a metallic coating and a clear or tinted PVB (polyvinyl butyral) interlayer that is designed to reduce solar heat gain. This glass type also prevents up to 99% of harmful UV radiation from entering the building. Solarshield is a laminated safety glass that is widely used in sky/roof-light applications. Its U-value is 5.8 in all available colours. Heat gain can be further prevented by applying a white perforated film layer to the glass, which allows light to permeate through the penetrations while reflecting the rest of the light.
Granite finish

Granite will be used in the courtyard area, due to its durable nature.

**Standard Sizes:** 600x300, 800x400, 900x450, 400x400

**Standard Thicknesses:** From 15 to 80 depending on requirements

**Finishes:** Sawn, Flamed, Honed, Bush Hammered, Antique, Polished, Split

IBR sheet metal roofing is the primary material used as roof covering. This is due to its flexible and lightweight nature. The material enables the design to manifest its concept of having a lightweight structure flowing over the building, unifying all elements of the building.

- **Pitch:** 1,5 degrees
- **Made of:** zincalume or Calvanised coated steel
- **Klip lock profile**

**SANDBLASTED CONCRETE**

Sand blasted concrete is also used in the outdoor spaces, for its decorative and durable properties.
CHAPTER NINE
TECHNICAL DOCUMENTATION

PLANS

SECTIONS

ELEVATIONS

DETAILS
FIG 190- Perspective

130.
CONCLUSION

With its inception originating from the arrival of the industrialisation period to its prominence stirred by government policies of the apartied regime (primarily the forced removals act, and colour bar), the taxi industry has been a system run by the people for the people. Its relevance and importance to the working class community is unprecedented and arguably unrivaled.

However, since its beginnings, the industry has been marked by in violence, a lack of accountability, and the recognition of a higher authority. These circumstances have led to the industry developing a reputation of an ungovernable, renegade industry with self-serving ideologies.

The theoretical point of departure informing this thesis is to investigate the correlations between architecture and identity. In so doing the thesis aims to discover a methodology in which architecture could be used to quantify, re-define and formulate identity. After extensive research, the methodology adopted in the thesis stipulates that the erudite manner in which to formulate identity, is to: one; use programmatic arrangements/functions which highlight each facet of the taxi industry. Two: To have the architecture relay the narrative of the taxi industry through the use of spatial articulation. Three: Through the use and re-interpretation of architectural typologies that pertain to transport, (more over the taxi industry) architecture. Finally the intention is to do so in a manner which foster integration between all stakeholders of the industry (the general public, the taxi drivers, and the regulatory body).

The final architectural product produced within this thesis is the culmination of a mythology in which the three stipulated identity formulation methods are strategically assimilated into a cohesive architectural edifice. The building represents the taxi industry through its incorporation of all facets of the industry, its architectural re-interpretation of transport architecture, and its ability to programmatically address the needs of the industry.
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http://en.wikipedia.org/wiki/Architecture; accessed 21/03/2010


Internet


State University of NY, Roman architecture, College or Oneonta, available, www.employees.oneonta.edu/farberas/arth/arth200/politics/roman_architecture.html, accessed 59/09/2010

DETAIL 1
COURTYARD AND PLANTER DETAIL
SCALE 1:20
DETAIL 2
ROOF AND BOX GUTTER DETAIL
SCALE 1:20
DETIAL 3
ROOF EDGE DETAIL
SCALE 1:10

180mm concrete roof

derbigum SP waterproofing
40mm screed with min fall
of 1:50

Terminating edges sealed for
a min, width of 500mm to the edge
turndown sealed to galvanized edge
gutter

edge strip extending into gutter

drip hole

steel window frame, to encase mechanical window openings

center pivoting, steel framed window openings
brickwork or reinforced concrete

polysulphide sealant

skimmed plaster finish

aluminium door frame cill fixed with stainless steel screws Ø 200mm c/c max. fixed to aluminium angle piece fixed to concrete cill and side fixed to steel post and brick wall.

38x38x3.8 not anodised aluminium angle fixed to slab with stainless steel screw

polysulphide
tiles to fall 1:100 min/
cement screed to fall
tile to archs spec on tile adhesive on sand screed on RC slab to eng. detail

DERBIGUM SP4 on double sided mastic tape to manufacturers spec

screeded fillet

stainless steel fixing screws
double sided mastic sealing tape

DETAIL 6
THRESHOLD DETAIL
SCALE 1:2