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Example

RENEWAL OF THE CITY FROM WITHIN THE DOORNFONTEIN PRECINCT

BY
BRENDON MICHELETTI

THESIS
Submitted in compliance with the requirements of the
MASTERS DEGREE IN TECHNOLOGY
At the
TECHNIKON WITWATERSRAND

Sketch by Micheletti 1999
I hereby declare, that the thesis, which I submit herewith for the research qualification,

MASTERS DEGREE IN TECHNOLOGY
ARCHITECTURAL APPLIED DESIGN

To the Technikon Witwatersrand, is, apart from the recognised assistance, my own work and has not been previously submitted, by me, to another institution, to obtain a research degree.
ACKNOWLEDGEMENTS

Andrea my mentor
Jono, Neal, Paul, and Hugh
The architectural staff at the Wits Technikon
My mother for her unwavering support
"spirito da mio padre"
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A- PROJECT INTRODUCTION

The once racially segregated urban fabric of Johannesburg is experiencing dramatic transition with different needs, attitudes and cultures. Patterns of use have altered and so has the social demography of the city and the urban fringes. "The large business sector continues to move to the suburbs in a bid to find growth and security to be replaced with small retail outlets lessening the amount of money available to the Johannesburg council to revamp the CBD". Finance Week, Politics and Urban Renewal, June 19-25 1997, p17. Depressed areas, areas lacking council funding within the city need to attention to divert possible neglect, to restore greater confidence within the business sector. The Doornfontein area of Johannesburg is one such area with a new collective vision created by the community, professionals, business, and local and provincial government, may possibly lead the CBD on a road to recovery.

This eclectic area consisting of commerce, retail, commercial, educational, light-industry, and housing sectors, all working independently from one another and from the rest of the CBD could possibly benefit from a unified urban renewal project incorporating all sectors of the community. Doornfontein's and Johannesburg's "metropolitan system is presently facilitating urban decay". Finance Week, A Tale of Two Cities, September 04-10 1997, p16.

By adopting a two part approach to design Doornfontein may be effectively utilized within and incorporated into the metropolis. The first part would be an urban analysis to investigate the nature of the problems experienced and types of input the area requires resulting in a supportive urban study. The second part will involve a design project based on the findings of the analysis and external influences such as politics by having interviews with relevant officials and businessmen and reading various economic journals.

Following is the Methodology, further explained in the next chapter.
B - METHODOLOGY

The dissertation will consist of two parts; the first part being a supportive urban research of the area surrounding and within the Doornfontein precinct, the second being a urban proposal followed by the design of a multi use building.

The supportive urban research study will investigate on a macro and micro level the influences and pressures within the specified area, to determine the ideal resolution of the exposed problems related to urban space and form. The macro study will involve the analysis and evaluation of the central area in terms of footprints, residual spaces, transport routes, landmarks, landuse, vegetation and landscape, plus gateways, nodes, edges, geological character and views from the road etc. The micro study of the Doornfontein area will include the above as well as the examination of planning controls, policy directives, town planning schemes and landuse allocation. Research will also be carried out in regards to national and regional concerns such as employment and lack of infrastructure, achieved through observation and interviews with the local community and the business sector.

The design section of the dissertation will include both an urban and architectural proposal.

The urban proposal, incorporating a framework strategy will be derived from the above, as well as research done on relevant theory.

The architectural design proposal will involve the selection of a site within the Doornfontein precinct and function and type of building derived from the urban analysis. Research specific to the site such as contours, council regulations, services and climate will also be done.
1. Migration and the urban and rural divide

Migration to the city primarily occurs due to the opportunities available, these outweighing those found in the rural areas. Aside from income, the city offers access to a variety of services and facilities.

The youth are generally those that move, they are able to adapt to the change in lifestyle. Migration has now for many rural people become the norm and to a certain extent expected of by their community. The development of shantytowns may lead to the assumption that many migrants did not quite understand the difficulties to be faced in the city. Due to pride or future possibilities, many stay in the city egging out a meagre existence. Many migrants express a positive image of city life and are not disappointed with what they have encountered. The majority believes they have improved their lifestyles and do not regret the move.

2. The poor man's options

For many migrants, it is difficult to escape the impoverished conditions of a shantytown or high rise dwelling. This is due to the economic conditions over which they have limited control.

3. Employment possibilities

The growth of a city corresponds directly to the level of industrialisation. The more wealth a country has the higher the urban growth rate (Gilbert: 1982)

4. Labour Opportunities

As the number of jobs available decreases, there is a growing tendency to develop the 'service sector'. It offers a solution to the employment problem explained above, as well as actively encouraging the development of skills.

5. The effects of the previous policy of segregation

The policy of segregation, enforced during the apartheid era, created two distinct areas.

One is the European area that established away from industry with wide roads and open spaces. The second, the majority of the population housed in estates of identical designed dwellings, with only minor attempts to provide services and amenities. This caused haphazard development and without proper planning in the lower income areas, has contributed to large amounts of money being spent on the maintenance of these sections that could have been design correctly at the outset. Since independence policies have altered with the city now experiencing high volumes of prospective urbanites, consequently the services are unable to cope leading to deterioration.

6. Government housing

On the periphery of the city it can be clearly seen that the government is providing mass housing now on a much larger scale than ever before, often some distance away from the city. Subsequently, large amounts of money spent on extending road networks, increasing dependence on the transport system to ferry people to their work places. What has developed is people cannot afford the cost of the housing provided and many opt to live in the city nearer to their places of employment.

7. Crime

From questioning people on the street in Hillbrow, the longer a migrant stays in the city the more attached they become to the way of life. Many people loose their close ties.
with their rural homes, returning only occasionally to visit their families.

The urban dweller is no longer an integral part of a community and is not bound by social controls with limited commitment to community values. The city offers many of these types of individuals quick gains with less chance of capture. In rural areas, this is not the case.

8. Sprawl

Despite churning up precise agricultural land, sprawl has had diverse effects on the people of Johannesburg. Homes continue to decentralise with jobs not as rapidly leading to traffic congestion, longer journeys to work and incessant peripheral development. This has had a detrimental effect on Johannesburg's inner city leaving it dull and lifeless, a place to avoid. The outward decentralisation it would appear continues unabated.

9. The situation today

South Africa in 1980 was 29.1 million, by the year 2010 it will have doubled. In 1985, 63 per cent of the population lived in or around the city. By 2010, this figure will be around 73 per cent.

Presently between 25 to 40 per cent of the total economically active black population is unemployed. This is estimated by the turn of the century there may be as many as 8 million unemployed. This places a huge burden on government and private organisations in terms of job.

Due to the differential rates of growth between the black and white population, and the general impoverishment of the former, it is not surprising that shanty housing is a common feature in and around the city today.

As jobs once reserved for whites only, now become available to all, there is an increased demand for residential space within the city. Hillbrow in Johannesburg is one such area in which the Group Areas Act was enforced. In 1991, with this act abolished housing close to the city was now available to all. This area quickly flooded with migrants with recent statistics revealing that there are approximately five people per room. (Individuals with less than 8msq available for living space suffer from increased levels of anxiety.)

10. Emergence of the Inner City transformation 1980s to the 1990s

Johannesburg, in the 1980's began to lose people and jobs due to outward movements of businesses to the suburban areas. This tendency seems to be irreversible and relentless.

Whilst discussing the city with employees at the ICC, it was concluded that due to political pressure, inner city development in terms of housing and governmental funded projects have all but completely ceased.

This has limited the governments' responsibility to provided inner city housing. Housing that is provided, is for the lower income bracket meaning a low tax base and less money to service the city centre.

11. Learning from the past

A study of the older sections of the city reveals a more complex, fine-grained urban fabric. Such areas are more permeable and in context. There is richness evident in areas that have evolved over time. Areas such as Melville's are context sensitive and contribute to the townscape as well as playing an economic and social role.

Conclusion

What is now needed is management

As the world becomes more complex, planning is essential to maintain control and guidance, with the achievement of a predetermined goal.

Urban developments like family heirlooms passed from one generation to the next. The original design may have been suited to that period, but today the requirements have changed. This is the difficulty facing designers of urban areas. Designs must serve generations to come.

Effective management of the growth of the city is now a matter of urgency, for the following reasons.

It seems many urban planners work in isolation, with only minor emphasis on the city as a whole; rather attention paid to elements such as parks, transport routes and housing. However, projects, as the Johannesburg 2000 Pilot Project is an attempt to consolidate ideas from relevant professionals.

Urban Design philosophy

Well-designed areas cater for both the poor and the rich possessing humanitarian qualities that are timeless. A true judge of an urban realm is adaptation; can the area absorb change and progress and at the same time retain some of its characteristics that have lasted for generations?

Objectives and Goals in Planning

Objectives and goals create a more logical, coherent and rational planning system. However, this does not diminish human responsibility involved in decisions.

The next section in my document is an attempt to decipher the above observations,
and to recommend relevant solutions based on the above conclusions.

**VISUAL ANALYSIS - POSSIBLE SOLUTIONS**

**Deciphering the City**

Derived from the above section, various solutions below govern my framework and design process. These issues will be development upon in chapters four and five.

1. **Managing the urban landscape**

Concluded through study, by tampering with the visual elements of the city or the preservation of historical buildings alone, does not renovate the urban realm, but rather through a holistic process of urban management.

It is necessary to explore the importance of the urban form as a means of combating growth in the ownership and use of cars.

The provision and management of open spaces are important factors of urban development, not to be separate from broader environmental concerns. The relationship between living in the city and the natural setting is indispensable for a pleasant and sustainable urban environment. Giving priority to green spaces as a part of a development is now essential.

**2. Future planning considerations**

The experience of moving within the urban realm provides lasting or memorable images of a city. The public realm is the corridor, the lobbies, foyers and waiting rooms of the city. These spaces should be hospitable, comfortable, coherent and convenient.

The improvement of the public transport system can have a positive impact on the urban form. This in turn serves as a means of combating growth in the ownership and use of cars.

Pedestrian linkage, to effectively move people in the city needs to be examined; for example the medieval axis of the High street can still today, be effectively implemented.

Within a precinct, a series of small neighbourhoods can exist; each integrated into the whole through street furniture, signage and surface treatment with buildings accessible and permeable.

There is a need to re-educate our population in social behaviour by example, to foster environmental respect and to increase the use of good quality and local materials in buildings and outdoor places.

**3. Vision for the city**

Research concluded that many planning and civic design proposals are a way in which to fill residual space. “Government action is more likely to follow public opinion than lead it” (Wates, 1987).

In the USA, there is a strong tradition of private companies leading programmes of civic renewal, fostering such actions within South Africa is now vital.

Attention focused on the traffic, inadequate public transport, poor housing, and homelessness, declining services, inadequate educational facilities, increasing crime and dirty streets encourages the development of a positive urban realm.

Both civic design and architecture should start to combine more ‘beauty’ with function to create a sustainable environment. It is found through research structures replaced every fifteen years is creating a ‘who cares’ approach to design.

Too few businesses and private individuals that utilise the city actually care about it. They may not live in the city, and they give little thought to its future.

The next section of my document is the Macro and Micro urban analysis. Together with the above information and relevant urban theory a sustainable and comprehensive framework may be generated.
**1. URBAN ANALYSIS**

**An Introduction**

Prior to developing a framework I felt it was necessary within my urban analysis to study and compare the development of the European and South African City.

**CITIES COMPARED**

**The South African City**

1. Cities that developed in the apartheid era are regarded as unique, South Africa like so many other African states share a history of European and capitalistic conquest.

The urban structure was simplistic in form incorporating racially exclusive and unequal segments of residential, educational, health and recreational facilities all designed to minimise interracial contact. Future growth was to progress outward thus preserving and reinforcing the pattern. This spatial effect not only separated racial groups but also increased separation between the workplace and home. The economy had focused on the 'orderly urbanisation' (Smith.1992) of the central metro areas. This then lead to the development of peri-urban settlements. The city is now, it seems unable to effectively manage this process of increasing population densities.

Due to the planning practices of the previous government, the urban realm has been left segmented and disjointed and unable to cater holistically for a more varied and informal style of usage. Architects and planners in South Africa throughout history have had limited tolerance for the informal sector, conflicting with the ideology of developmentalism and the planners vision for a city beautiful. Such activities that were seen as threatening to urban controls are now ironically being presented as a means of resolving the urban crisis.


**The European City**

2 The European city's urban form at the early stages of development displayed a high degree of coherence due to the continuity of construction and similarity of built fabric. The urban form always appeared to be incomplete, enabling extensions, interruptions and spontaneous developments. Streets and squares created a unique environment with which the community based its identity. The facades facing the street were forced to participate.

When comparing urban forms between Africa and Europe it is important to note that Europe was created by ten centuries of political, economic and cultural events. Africa was to adopt and inherit many foreign styles, skipping the self-determination stage so critical in the development of national identity and urban style.

Throughout Europe, 'erratic' (Hall.1992) layouts were replaced by designs that were more regular. This was seen as a conquest of air, light and freedom of movement.

Traffic and street furniture began to dominate, pushing architectural elements into the background. In Monet’s ‘Boulevard des Capucines’ in 1873, the architectural forms lose all recognisable stylistic form and become distant walls shrouded in darkness and stripes of light.

In the late 1890s the Garden City movement began to influence layout of the urban fabric and urban planning became a recognised discipline. The home became the most important part of the city and cities spread throughout the countryside as recreational activities required more space. City buildings and whole blocks took on single functions all in a respectable manner.

In the early 1900's incremental civic design ceased to exist and was replaced by the necessity for planners to house the ever-increasing densities of modern cities. It was important to note today instead of attempting, to alter the urban nuclei to come in line with modern expansions as was the practice a century ago, planners are seeking to alter their mistakes and reconcile history and modernity.

**Conclusion**

The European City contains many elements that could contribute to the creation of a vibrant and coherent South African urban realm. Much can be learnt from the experiences faced by foreign urban designers and mistakes can then be avoided.

1.1 MACRO STUDY

1.1.1 Locality and Contextual Environment
Refer to Drawings on Page 9-12.

Doornfontein is situated approximately 2.5km east of the CBD. It is located in the Eastern Metropolitan Sub Structure. The area is well connected to the surrounding environment through primary and secondary transport routes as well as the railway line to the south of the precinct running in an east-west direction.

The intensive residential areas of Berea and Hillbrow bound Doornfontein to the north and Northwest, Joubert flat lands falls to the west with Johannesburg central and City and Suburban areas to the Southwest and south. The Sporting precinct of New Doornfontein falls to the east of the study area. Doornfontein is primarily an educational node but has elements of light manufacturing, small-scale business and residential areas.

1.1.2 Natural Features

Drawing on page 13 shows the existing natural features that are major form definers. The most significant being the Berea ridge forming the northern boundary to the precinct. To the east is the open landscaped area of the sports precinct. There are no formal parks, with Joubert being the only one near to Doornfontein. The roads throughout are well treed except to the south-eastern side of the precinct and bordering the ‘Citizen’ building.

Existing open spaces are not completely isolated and can be linked to form an open space network if existing linkages are strengthened and new links established.
A: View of the precinct from the Technikon
Sketch by author.

B: View of the precinct from the Technikon
Sketch by author.

C: View of the precinct from the Technikon
Sketch by author.

Sight Directions
1.2 MICRO STUDY

1.2.1 Evolution of Doornfontein

Early Johannesburg planning expressed a neutrality and equality with the opened grid plan orientated on east-west, north-south co-ordinates. Refer to Drawings — Page 8. Doornfontein in 1891 was being promoted as par excellence, with Saratoga Avenue becoming the 'Millionaires Row' (Chipkin 1993). Today only few of those houses remain. Jewish, German, English and Afrikaans families lived side by side in Doornfontein. All attempting to adopt the upper class anglicised values of the English aristocracy. This mixture of cultures may explain the existence of a Jewish synagogue, a Dutch Reformed church and a Greek Orthodox Church in the Doornfontein Precinct.

Greek Orthodox Church.
Sketch by Micheletti: 1999

In the 1920s, the inhabitants of Doornfontein were beginning to accumulate wealth and capital to be used in the property boom of the next decade, as well as to build modernistic styled houses in such areas as Houghton and Saxonwold to which they later moved. During the 1920s the area to the south of the railway line in Doornfontein was becoming a haven for migrant workers with slum yards developing as the previous owners moved north to the new suburbs.

In the late 1930s, high-density residential blocks grew up in the economic boom on the perimeter of Joubert Park as well as on the tram routes of Hillbrow. In 1934 the Slum Act was passed by parliament and was followed by the clearing of these slum yards. Light industry then began to develop and this was to herald the influx of low-income workers into the area as well as factory premises for small scale manufacturing enterprises. Today buildings are still owned by individuals and small firms with financial and corporate capital only showing minor interest in the area. In certain sections within the precinct, residential properties have been occupied by low-income urbanites resulting in a marked decline in the value of the housing stock.

Due to the rise in CBD land values since the 1980s, land prices within the precinct are disproportionately high relative to the building value. Because of the high cost of land added to disproportionate new construction costs investments in new buildings are at optimum profitability in this area when directed to commercial usage, hence residential developments have ceased.

1.2.2 Doornfontein: The Existing Situation
Refer to Drawing — Page 14

1.2.2.1 Nodal Structure, Landmarks and Gateways
Refer to Drawing — Page 21, 22.

Regionally various nodes surround Doornfontein. To the north, northeast and northwest there are Berea, Highlands, Yeoville and Hillbrow respectively all are residential nodes. To the west, there is the residential node of Joubert with railway facilities as a transport node further west. To the south and southwest, there are the commercial, retail and light industrial nodes of city suburban and of Johannesburg central respectively. The sports node lies to the east of the precinct and a religious node exists to the west of the Technikon. Local landmarks include the Technikon itself due to its imposing structure, the Ponte flats as well as the Berea ridge. The athletic and rugby stadiums are clearly identifiable. There are also minor nodes such as the Technical College and the interchange of Saratoga Avenue.

View of Sivewright Street Looking South, with the Technikon College on the left. Sketch by Micheletti: 1999

The collection of historic buildings at the corner of Beit and Siemert Streets can also be used to identify the precinct.

Collection of Houses built at the turn of the Century at the corner of Beit and Siemert Streets. Sketch by Micheletti: 1999

5. The expression of entering or exiting an area enhanced by an urban element defines a gateway. Doornfontein is bounded by gateways. The northerly progression along the M31 entering Doornfontein precinct is such one gateway. The railway line as it moves westward and enters Johannesburg is another. Travelling along Saratoga Avenue in a westward direction then into the flat lands along Wolmarans, a gateway is created by the sudden presence of tall residential buildings. This is also experienced at the top of Nugget Street proceeding into Hillbrow.

Moving along Saratoga Avenue in either an east or west direction, by proceeding under the Harrow Road flyover frames the athletics stadium or the Technikon in the opposite direction. These are just some examples of gateways.

The identification of nodes of mixed land use and other elements of the urban realm indicate the possible siting of future developments. Reinforcing them and extending the mixed use development to form corridors of mixed-use frontage. Pedestrian proximity will then be ensured and introduced where necessary. It is important to note this is an ongoing process.

1.2.2.2 Neighbourhood structure

Drawing — Page 22. Illustrates the neighbourhood structure of Doornfontein. This indicates the positions of key nodes, amenities and facilities and where future facilities may be placed to ensure adequate access to residents and users for their daily requirements. The district unit has a radius of approximately 400m, representing a comfortable walking distance. The district centre is obscure, as there is no traditional element that usually represent a gathering point such as a church or community centre. Again, the designer is able to use such information to identify and locate necessary facilities and services.

The logic of a district structure allows for a hierarchy of nodes, implying an increased density gradient towards its centre.

1.2.2.3 Residual Space and Footprint

Drawing on Page 41. indicates the footprint of buildings within the Doornfontein precinct. Holistically the precinct is characterised by a fragmented coarse grained fabric to the north side and a more fine-grained fabric to the south. This drawing not only shows the shape of buildings and their relation to one another but also the space available for in-fill and development. This is clearly seen on Drawing on Page 25 a negative of the footprint study.

Expansion possibilities exist throughout the precinct to create a more complex fabric allowing for a more integrated and natural progression of future developments.

1.2.2.4 Vehicular Movement and Road Hierarchy

Refer to Drawings on Pages 24, 65

The following study involves the identification of regional accessibility, local road network, parking, pedestrian movement and public transport facilities.

It can be concluded that Doornfontein is well serviced by both arterial and secondary roads as well as a railway service. The problems identified were few, however there are as follows:
- Poor circulation at peak times when exiting the Technikon entering the Siemert extension.
- Traffic congestion at the entrance and exit to the new Standard Bank along Beit Street.
- High speeds of traffic along Saratoga Avenue, Siemert and Sivewright roads.

1.2.2.5 Parking

Refer to Drawing on Page 25.

The Technikon is the only institution that experiences parking problems. This originates from the fact that public transport facilities are not used to their full potential for various reasons such as public transport systems are perceived as dangerous and inefficient. Parking availability throughout the remaining sections of the precinct are sufficient at present.

1.2.2.6 Public Transport

Refer to Drawing on Page 26.

A bus service is available in Doornfontein along Beit Street. There is also the Metro Rail facility at the southern side of the precinct. The bus stop is informal without any permanent structure. Public taxi services do not presently exist, however once Doornfontein experiences growth providing such a service could become a way in which to develop employment.

1.2.2.7 Pedestrians

Throughout the precinct, there is adequate pavement space for ease of movement. Pedestrian channels across Saratoga Avenue and Sivewright and Siemert Streets should be upgraded and established to encourage movement. This will have a positive effect on the area if people feel they can move around easily without concerning themselves about traffic.

View up Beit Street looking west. Form the picture ample sidewalk space can be seen.

Sketch by Micheletti: 1999

1.2.2.8 Landuse

1.2.2.8.1 Overview

The retail and trading structure is characterised by the availability of small outlets. Presently, many small outlets are closing due to the lack of consumers in the area. Extensive retail and residential rights exist; these have not been exercised due to Doornfontein's present unfavourable economic dispossesson.

1.2.2.8.2 Zoning

Refer to Drawing on Page 26

The largest percentage of erven is dedicated to educational zoning with Business 1 being the next largest percentage, with the rest allowing for the development of Residential 4, Business 2 and 4, institutional and Commercial 1 and 2. Along Beit street zoning allows for the establishment of Business 1. This will allow for the siting of more retail and commercial outlets where required, ultimately enhancing the area's performance. The primary landuse throughout the rest of the precinct is mixed (residential, business and retail).

1.2.2.9 height

Refer to Drawing on Page 14.

Due to the eclectic zoning practice, heights are extremely varied, from single residential properties to seven storey commercial and educational buildings. Most buildings have a single use, with the ones along Beit Street having the ground floor dedicated to retail and the above levels to residential or commercial use.

1.2.2.10 Land ownership

The Technikon is the largest landowner within the precinct with the SMSS owning all movement networks and associated parking. The rest of the precinct is owned by a variety of landowners ranging from single persons to organisations.

1.2.2.11 Land values

The mean land value in the precinct ranges between R100 to R150 per sq. meter. Improvement values vary reflecting an average of between R300 to R400 per sq. meter. Values differ greatly across the precinct with the lowest values on the West Side and the highest to the east. Values also seem to depend on the degree of decay experienced and of renovation undertaken.

1.2.2.12 Redevelopment Potential

Refer to Drawing on Page 14.

Vacant sites between Beit Street and Carrey Streets show the greatest potential for development/redevelopment. Throughout the precinct there are properties considered 'soft' (Lynch 1975) and ready for redevelopment. Refer to Drawing

1.2.2.13 Landuse Trends

Landuse trends follow the zoning prescribed by the council. The zoning enables a varied use of land aiding complexity and a fine-grained morphology.

1.2.2.14 Built Quality

In the last ten years, there has been no substantial development within Doornfontein besides the new Standard Bank building along Beit Street. Large proportions of buildings are in good condition with a similar proportion requiring regular maintenance and repair. Many houses have been neglected and require renovation; these are ones built around the turn of the century. A few of these houses have been renovated to cater for retail and commercial trade mainly on the East Side of the precinct. Low-income earners without the resources to improve the structures however inhabit many others.

Examples of the type of housing which are being renovated and neglected within the precinct.

Sketch by Micheletti: 1999

8 Source: JCC 1998

9 Source: JCC 1998
Refer to Page 10 for Location of Buildings within the Precinct.

FAÇADE STUDY — PART 1. (All elevations as seen from the street)

Refer to Page 10 for Location of Buildings within the Precinct.

1:2 MicroStudy.
Conclusion

From the above analysis and through informal discussion the following problems and opportunities were identified.

1.3 Problems

- The occasional acts of violence and crime as well as social ills plague Doornfontein.
- The appearance and image of the precinct is one of negativity, lack of security and general decay, especially on the south side of Beit Street.
- There is a lack of public amenities e.g. toilets, water points, refuse bins, storage facilities and service facilities such as a post office or a police station.
- Lack of pedestrian crossing points especially along Stelment and Sivewright Streets.
- Negative public spaces exist, surrounded by degradation and buildings with no frontage development.
- Lack of and access to a variety of shops. Presently there is an outflow of retail and commercial services.
- Lack of entertainment facilities such as clubs or games halls. There have been no attempts to develop a street culture.
- The Technikon surrounded by a fence creates an impenetrable edge limiting cross movement. Due to its insensitive placement and size, the precinct has lost its finer grained morphology resulting in a poorly defined precinct centre.
- Under utilised buildings throughout the precinct, create an impression of uncertainty.
- Older buildings have been allowed to degenerate exhibiting an impression of lack of pride and low income.
- The precinct is bounded by four different urban elements, this has the unfortunate effect of transforming Doornfontein into an urban buffer zone causing a vacuum within the area stifling development.

- The precinct is presently experiencing under-performance and decline due to its inability to offer any 'draw cards'.
- Governmental, Institutional and Business red tape and bureaucracy will hinder developments.
- The present lack of sectional title ownership options.
- Lack of funding from all sectors of the community for urban-based projects.
- Political and economic uncertainty.

1.4 Opportunities

- Doornfontein is in close proximity to residential areas, transport routes and the CBD.
- The area has a unique character. The retaining of many of the buildings from the turn of the century with modern structures enhance the precinct's visual presence.
- Elevations of buildings along Buxton Street showing the old and new together. This has given the Precinct a visual quality that can be utilized to its advantage. Sketch by Micheletti 1999.
- The availability of municipal services and an extensive road network act as a solid base for potential developments.
- The mixed-use edge along Beit Street can be strengthened and extended upon.
- The availability of residual space throughout the precinct combined with the positive council zoning rights can be used to develop the precinct into an attractive, integrated and complex urban system.
- There is a large variety of building types thus allowing for an eclectic urban realm.
- Doornfontein is presently disjointed however there is the possibility to further integrate and network the precinct to areas such as Hillbrow, Berea and the Sports Node. This can be accomplished by defining Doornfontein as a node itself.

The next section, using the above analysis and conclusions is the formation of a development framework to direct my urban proposal and subsequent architectural component.
2. URBAN PSYCHOLOGY AND SOCIOLOGY

Research shows, Doornfontein over the last decade experienced a degree of both over and under development. The introduction of large institutions such as Perskor (LTD) and the Technikon building has almost destroyed the morphology of the area. The decay of existing structures demonstrates the lack of willingness by business people to invest.

Large institutions such as Perskor (LTD) has almost destroyed the morphology of the area.
Sketch of the Perskor (LTD) building in the Doornfontein precinct.
Sketch by author.

It seems, within the precinct, there is no way for the small residential component to influence future development. This frustration breeds a sense of hopelessness, apathy and despair.

2.1 Contemporary urban Communities

One way in which a community can be judged successful or not is by the amount of general decay of the area in which they live as well as the control people have over their environment. Essentially this is the sense of responsibility felt, pride within an area and the possibility of a member of the community securing a stake in the future of a district.

To retain links with existing cultural aspects of their own lives.
Sketch of a rural village. By author.

Due to high costs of development and the need for alternative ways of creating an income besides mainstream business, designers should enable the development and growth of small-scale enterprises thus stimulating the economy. Such projects are self-generating and self-sustaining and supportive creating an innovative environment.

2.2 The Shape of the City

The types of buildings along a street are an expression of the ideology driving society. The Technikon building is irescapably institutional and as such reflects the determinism inherent in the role of the institution and the order it wishes to establish. While the message stemming from the building is essentially reductive and object based in contrast the language of its actual occupation by people is rich and complex. Buildings give certainty to an otherwise meandering society.

Buildings give certainty to an otherwise meandering society.

2.3 State of No Culture

A negative yet recent development in the daily lives of people has been the demise of their ability to generate their own urban culture. To retain links with existing cultural aspects of their own lives and the emergence of a western based society.

A negative yet recent development in the daily lives of people has been the demise of their ability to generate their own urban culture. To retain links with existing cultural aspects of their own lives and the emergence of a western based society.

People drawn to areas such as Hillbrow and other flat lands due to the lack of facilities and possibilities of housing elsewhere cannot decide into which community they can best locate. Thus, there is a rapid turn over of residents, the drive to escape a segmented physical environment. This prevents a community to develop, however human nature forces people not to quit despite the enormous pressures on them, there is a constant struggle to establish their own identity and to retain contact with others.

2.4 Community Building

As for adults and children alike, there is a need to congregate allowing for the expression of feelings and emotions through story telling and social interaction. A pub or beerhall that is always full demonstrates the need for a community to have a sense of unity, a meeting place to gather. Without a sense of place, permanence is never achieved.

Sense of place. permanence achieved. A Village in Italy.
Sketch by author.

Sketch of a square
Sketch by author.

A meeting place to gather. Sketch of a square.
Sketch by author.
3 SITE IDENTIFICATION

The site as derived from the urban analysis.
SITE

SITE IN CONTEXT

Site as viewed from the Technikon Building

3.1

SITE IN CONTEXT
The site is 183m long, if falls 5m across its length. Every 35.6m it falls 1m.
If the proposed development is 70m in length the site will fall an average of 1.5m.

Site Sections: Section A, Section B, Section C
Scale: 1:2500

Section A
Section B
Section C

Section Looking West

Section looking North

Context: Robertson St.

Department: Planning

The site is 183m long, if falls 5m across its length. Every 35.6m it falls 1m. If the proposed development is 70m in length the site will fall an average of 1.5m.
The Brief

The main aim is to rehabilitate the area, redevelopment of disused industrial sites and increase density by the introduction of a mixed-use development.

The site, chosen from information gathered and analysed, is ideal for the siting of an inner city project.

The location of the site calls for a new solution with at least 50% of the floor space reserved for dwellings, with the remaining percentage open to definition.

The development needs to recognise contextually its position, within a fragmented precinct. The site is at the rear of the precinct with the intention to draw people into that section, and to fall in line with the urban design framework.

The design must consider areas that should allow public access and involvement and those that should remain private, also, sections that can be multi-functional with increased pedestrian activity.

The development must have 'presence' within the precinct. Designing from the inside out, exhibiting a clear understanding of how people live.

Internal circulation spaces should be attractive and not necessarily directly off the street.

High-density dwellings do not mean that private outdoor spaces cannot be provided, a small garden, roof terraces or a tiny balcony may be sufficient.

Modelling of the development involves contrasting treatment of the elevations and the use of specific materials in and on related spaces and elevations. Articulation of the roofscape is necessary to enhance and individualise sections where required.

The orientation of the ground level component is to provoke and propel the urban realm.

"The diversity of building types and architectural styles in the immediate vicinity argues against the adoption of a specific historical style or the use of directly historic references in its design. Nor is it appropriate to adopt the eclectic and unspecified approach to urban design that treats history as a 'dressing up bit' to be used" Lumley, I. 91-10-2. AJ. Pg. 24.

A mixed-use building requires a move away from traditional zoning practices, allowing for the inclusion of light industrial components. The high cost of construction encourages the creation of such developments. This satisfies the needs of developers desiring a return and the housing department by the development of residential and retail sites all under one roof.

The development needs to be responsive to the site, awareness of the industrial, commercial, residential and railway sectors surrounding it.

Composition of the development, refined to create a logical arrangement of the structure that would not look out of place in any such scenario throughout South Africa. Clearly the design must not reject or superficially represent cultural and stylistic references but to question the typecast architectural styles adopted for inner city developments.
4. URBAN THEORY

4.1 INTRODUCTION

RELEVANT URBAN THEORY RELATED

When an area is selected for upgrading a number of aspects within the precinct need to be focused upon and urban theory needs to be applied so the proposal may be as effective as possible.

4.1.1 Precinct requirements

Seen from the urban analysis, as cities within South Africa continue to grow with the constant inflow of migrants, the existing services are unable to cope and degenerate due to the pressures exerted upon them.

A number of solutions proposed include the increased development of the informal sector, as the formal sector cannot cope with the sudden rush of prospective workers. Existing services need upgrading, all attempting to increase the number of opportunities available. Refer to Drawing Page

4.1.2 Ease of movement and access

Through observation, where there is ease of access to services and facilities within a precinct, it is more likely that it will be a thriving node of business and social activity. Movement can be restricted to public and private zones without hindering the ease of movement to the available facilities. If not achieved within a precinct, certain areas may become stagnant, clearly seen along Biet Street in Doornfontein where business premises are standing empty.

Distance is also a barrier limiting opportunities of choice and access to facilities. In an ideal setting urbanities should be able to gain access to facilities by foot. Refer to Drawing Page 22.

By viewing the Johannesburg CBD from the air, the extensive road networks present indicate a city that has developed around the basis that the majority of people have means of personal transport. This has marginalised the opportunities available to the city's lower income groups.

One possible solution is to place greater emphasis on public transport as a means of ferrying people within the city.

4.1.3 Encourage mixed use and greater social interaction

Areas within the city that offer the most services and a wide range of opportunities, are usually the most innovative and progressive precincts. Hillbrow for example is a hive of activity, hence a wide range of services and facilities are available.

A precinct that promotes social welfare through the provision of place for social interaction creates healthy environments within the city. Here such interaction induces aspects of security and social conscience. Mellville for example big business does not begin to monopolise business opportunities.

4.1.4 Needs of the urbanites

Meeting the needs of the urbanites is the overall objective of a management strategy. There are the physical needs such as housing, health, employment and so on. The social needs are the opportunities made available for social interaction thus increasing community bonds.

There is also a psychological need within a precinct. People need to feel secure with a sense of identity and belonging. A precinct where possible should also provide elements that will stimulate individuals on a sensory level.

When an urban settlement is able to cater to the needs of its community, a sense of place is established. There is symmetry between the people and the facilities available. This in turn creates a diverse and interwoven environment.

Urbans‘ configurations “generate greater opportunities for people and enhance living to greater degrees than others” (Dewar 1991).

4.2 URBAN DESIGN STRATEGY

4.2.1 Equilibrium

A city’s development over time is a dynamic process, as styles of planning and design alter to cater for the constant needs and requirements of the urbanites. Guided growth is achieved by a framework, ensuring that certain elements of the city, for example big business does not begin to monopolise business opportunities.

4.2.2 Intensity, Diversity and necessary Complexity of the urban realm

Through observation, positive urban environments are zones of intense activity. Attracted, is a high population rate, enhancing the complexity of the area by bringing together a wide range of activities and social conditions. Private and public spaces that are in close proximity to one another act as defining elements. A private space could not exist without a public space beyond.

4.2.3 Linkage

Whilst observing the city it became apparent that independent precincts cannot operate successfully. Areas of intense activity rely on the interaction of others, exposed to as many urbanites as possible, travel to such areas must be by foot or public transport wherever possible.
Barriers between urban areas need to blend into one another, if they do not an area may develop into a buffer zone. Doornfontein for example, is in such a situation. A possible solution is the making available of a greater amount of services and facilities to draw people to within the district, limiting the effect of the barriers around the precinct.

4.2.4 Creation of community

Whilst studying the Doornfontein precinct, it was found through street interviews that when an urbanite relates to, or feels part of a community, a sense of belonging and identity is developed. In areas of high density development with limited public space, people feel isolated and defensive. Conversely, where building styles vary, and there are green areas available people tend to congregate and interact. This interaction is the basis for community generation.

4.3 FACTORS EFFECTING THE DESIGN OF URBAN AREAS

4.3.1 Plans and Frameworks

An effective plan should be able to direct growth, governed by a set of guidelines. Growth is a continuous process and plans should be able to allow for such change.

Frameworks guide the growth of an area ensuring enhanced existing relationships.

4.3.2 Aspects of planning

The following actions maybe used as guidelines when planning.

Holding actions; here residual areas are left undeveloped in strategic places allowing for planning decisions to be made in the future, when conditions and needs change. Structural actions; this is the creation of public space, facilities, housing etc, and how they effect an area in which they are developed. Such actions should be multi-functional in use where possible. Controlling actions; this is where design is limited in certain aspects such as the placement of roads, in order to preserve existing working relationships. It can be concluded that the structural action is the most important as it is an expression of form, a process of action and reaction.

4.3.3 Place Generation

The alignment and intersection of an axis and point creates friction; generating the creation of place, such as a market or square. Squares as structural actions may be social elements, but also allow business opportunities to exist in the form of markets.

Found through analysis was the urban proposal for a detailed sketch. Sketch by author.

4.3.4 Structure and form

Due to financial constraints and poor planning practices, many urban upgrading actions are symbolic and tend to diffuse urban growth, are more symbolic gestures.

4.3.5 Urban open spaces

Such elements are an attempt to provide dwellers with contact to small pieces of natural setting. In studying the city, it was found that, if urbanites do not have access to a park or open space many, if financially possible will opt to move to the suburbs.

Through discussion sprawl for many people living in the suburbs is a positive action, moving away from the decaying city centre. People feel the further out they build the closer they will be to open rural areas. However, by studying morphology maps of an area this is not the case. Sprawl is continuous and those on the fringe today become the suburbia of tomorrow. Lonehill in Johannesburg ten years ago was a suburb developed to escape the effects of commercial development. Today housing developments and shopping centres surround it.

way to achieve this is through the hierarchy of spaces and form. When public spaces are negative, the area as a whole despite well designed buildings is negative. Conversely, well-designed public spaces alleviate the pressure on poorly designed buildings.

4.3.6 Development of Urban Systems

In the future, there is a need to allow for rapid growth in existing urban areas. Road networks should not take precedence when designing future centres as they act as barriers and split areas of activity, but should rather act as defining elements.

4.3.7 Advantages of increased densities

Through studying areas of increased density such as Melville, opportunities abound. The informal sectors are able to specialise and to coexist with larger organisations. Due to increased density, services and facilities reached by walking is an ideal, increasing accessibility. Therefore, social services and other public orientated facilities are utilised to their optimum levels.

4.3.8 Sprawl

To curtail such an action, it is necessary to increase densities of new or existing developments. This does not mean there must be maximum site usage, but the achievement of a density sufficient to reach points of public transport and basic services by foot.

4.3.9 "Fine grained urban fabric and movement channels as integrators

4.3.9.1 Integration of urban areas:

The urban fabric needs to be relatively continuous and intensive, thus promoting a holistic experience of the physical environment. Boundaries begin to diffuse and there is increased exposure of services and facilities.

4.3.9.2 Connector routes as structuring elements:

Movement routes enable the flow of people and are a physical expression of the energy of the city.

Routes should not be continuous but allow stopping and gathering. At such points, services collect and develop to benefit from the potential client base.

Intensive activities respond to flows of people by locating along routes. Movement generates activities and vice versa, hence the creation of activity spines. (Dewar, 1991)

4.3.9.3 Advantages of activity spines

Accommodated, along a route are varying types and scales of activities. Benefiting from each other’s ability to attract clients, thus maximising economic efficiency.

The ease of movement ensures greater amounts of people reached by the available variety of activities. If facilities have greater exposure, the more efficient they become as they benefit financially from the large amounts of users.

4.3.10 Corridor growth

By studying the CBD, nodes of activity occur along movement corridors due to accessibility and rhythm. A bus service for example stops at predetermined points, emphasising activities around the stop.

4.3.11 Linear development

By studying the layout of Johannesburg’s road network planning. Today is increasingly concerned with neatness and a high degree of administrative control.

Related to the linear layout of the city is the relatively straight layout of the road networks found within. This creates an opportunity for intensified activities to be at the point of crossing of movement channels.

Note: a node is introverted; an activity spine is extroverted, design should therefore emphasise the creation of activity spines.

4.3.12 Hierarchy of Routes

An established hierarchy of routes ensures that the main channels, are where the majority of services congregate. Shorter routes that will not effectively accommodate intense activity and freedom of movement are then used for the positioning of housing etc. Such an action increases the legibility of an area.

4.3.13 Public spaces and places

In the past, urban development, governed by the positioning of public spaces, places and movement patterns, where the dominating buildings and parks celebrated is no longer applicable.

During the process of analysis it was found that there has been and continues to be, a trend to move away from the public space as a means of entertainment and interaction and retreat into private zones. The public realm has begun to play a more supportive role to city, an act of symbolism.

Public space through effective design may again become the expression of city life and a way of partaking in the process of city dynamics. Spaces allow social interaction, to meet, to play and study away from the clutter of a small dwelling. Town squares cater for spontaneous activities such as fairs and theatres. Open spaces are of major structural importance linked to activities around them.

4.3.14 Public facilities

Through study and research it was concluded a public facility needs to be designed around the requirements of a community where such elements are extrovert, reaching out to the area. Facilities must allow for ease of accessibility and movement. The facility or service exposed to a certain degree, to the physical elements of city life, such as traffic and movement channels will further integrate into the public realm linking public services together allowing for multi-use. For example, a sports field used for cultural events and markets over the weekends.
4.4 MANAGEMENT

In the process of gathering information on Johannesburg's urban proposals from the Planning Department of the GJMC, it was concluded that fragmented local authorities with narrow agendas manage South African cities today. There is a holistic approach to the control and patterns of urban growth, instead cities grow organically with no limit to sprawl. However, on small projects there is excessive control, limiting ingenuity. Control is largely administrative, not structural, rigidly imposing rules and regulations with only minor flexibility. Control is vital, however in many governmental departments today it is negative and rarely encouraging. This type of authoritarianism leads to simplification and lack of complexity in establishing urban areas.

Further concluded that when a part of the city designated for urban renewal, professionals deal with sections or parts at a time and never the whole. This leads to work done in isolation and ultimately the design does not fully integrate into the existing urban fabric. Through simple observation, such planning is usually comprehensive and complete not allowing for innovation and spontaneity. Areas designed around road networks are extensive to ensure ease of movement. It appears, trading requires large shopping centres, with every service available enclosed in an air-conditioned sprawling structure.

In many cases, due to financial concerns and time frames, design teams use a blue print and theory approach with little thought and judgement to the concerns and desires of those that will use and live around the development.

However, such Projects as the Johannesburg 2000 Pilot Project is an active attempt to resolve the above issues making planning a more transparent and community involved activity. Yet to be seen are conclusive results.

4.4.1 Management of the Structural System

- Activity systems

This is the network of interlocking linear activity systems, these accommodating economic and social activities. Such systems to be successful are dependent on the following:

- The creation of continuous, direct public transport channels across the metro area. Different modes of public transport maximise mobility increasing density of catchment areas thus increasing the viability of the transport system.
- Reinforcement of transport channels by providing public space along them especially at points of intersection. This will allow informal activities to develop and the structures erected will develop a sense of scale and enclosure.
- To encourage more private sector involvement.
- Maximise the potential of the best-located parcels of land with high-density growth.

By visiting Johannesburg's suburban areas, one can conclude that there are pockets of activity working in isolation. Such areas lack certain facilities leading to mass movement from one node to another. As these developments are widely spread, private transport is a necessity causing pressure on the movement infrastructure and leading to the expansion of road networks. Nodes also require large holding areas for vehicles creating a negative aspect to the urban realm.

4.4.2 Urban spaces

Intensive activity areas promoting efficient and slower transport network is now essential.

One of the conclusions of the analysis showed more space required, that is public is needed between developments within the city, instead of simply splitting the plots. This will enhance movement and allow the positioning of lower order public facilities.

4.5 PROCESS OF DEVELOPMENT

- Developments are not only the proposed structure but also the sizing of the plots. Within a district, varying plot sizes will attract a wide range of developers from individual enterprises to large-scale retailers. This should in turn allow for greater flexibility within the framework and encourage innovation in best servicing the needs of the community.

4.5.1 Expansion of planting and landscaping

This has proved beneficial in hostile environments. Landscaping has the ability to soften the edges of developments and to define places of recreation. In Johannesburg and other cities in South Africa, it was an historical element to plant trees along the edges of road networks, reintroduced to contribute to regionalism and district character and is ecologically sound.

4.5.2 Imploded growth

Observe, by walking through an area such as Hillbrow and experiencing the dynamics of the precinct are the following advantages of high-density living.

- By increasing residential densities alone, there is an immediate increase in the levels and ranges of commercial services and greater opportunities for small-scale business to develop increasing the resident's thresholds. This will in turn lead to the enhancement of the local economy within the precinct. Mixture, diversity and overlapping activities could limit the dependence on transport services.
- In Johannesburg, there is now a need to increase accessibility not mobility. With imploded growth, there is a reduction of private transport as services are within walking distance.
- Large plots become a burden for the owner, subsequently become neglected resulting in unhealthy and unsightly wastelands. Through observation this can be seen especially in the industrial areas, south of Johannesburg's CBD.

Despite the above observations, Johannesburg continues to sprawl with the construction of single dwellings. This is separating living from services and activities, leading to greater dependence on private transport and extension of the already vast road systems. For example

9 Source, ICC
10 See Tibbalds, F. Making People Friendly Towns (Longman Publishers, Essex, 1992)
Fourways and Rivonia, are now experiencing high volumes of traffic.

Imploding growth does not necessarily mean the construction of high-rise developments. Increased density obtained by encouraging attached housing and two to four storey walk-ups is proposed. This has been used to great effect throughout the world and has proved to increase the safety of residents, introducing a fine-grained morphology as well as providing an adequate degree of privacy. Within the Johannesburg, the analysis indicated that there are large amounts of under-utilised parcels of land. Not all this needs to be developed but used to create buffer strips between various land-use types. For example, a piece of open ground need to shield a housing block from a neighbouring industrial complex.

The expansion of the city will never cease, but by slowing it with correct management strategies should improve and revitalise a once degraded area. Densification, only implemented where it would make good financial and economic sense and facilitate the people of the area.

4.5.3 Public Infrastructure

When enhancing an urban area, develop where financially possible public service buildings such as schools, clinics and halls as well as open spaces. It is also necessary to develop the economic infrastructure by permitting within the design, a wide range of opportunities from manufacture to trade.

Implosion design, a conclusion

"13 Whist studying examples of successful urban housing schemes, it was found that only housing with scale, definition and closure with necessary and strategically placed landscaping will draw people to the city, who would otherwise seek shelter at the periphery.

14 Also concluded was that multi-use design and sharing of facilities has now become an economic necessity. Instead of constructing a number of complexes with limited facilities, a single development that can incorporate a wide range of options for the user successfully applied throughout the world is proposed.

4.6. THE URBAN ENVIRONMENT

4.6.1 Image of the Environment

It is through the act of involvement and observation that you can experience the urban environment in its totality. For this legibility to be achieved the environment should possess as many as possible of the following urban elements:

4.6.2 Legibility and Image

16 A precinct having a visual quality, is where various parts are organised and represented in a coherent pattern. Pathways and symbols must be clearly identifiable. Movement through the city should rely on sensory clues from the surrounding environment. These need to be free flowing and constantly represented.

The city must possess places of exploration, from which the user establishes a relationship between the area and oneself. Complete chaos is not pleasurable, but opened-ended order will allow for further spontaneous development resulting in diversity and visual interest.

Environments should demonstrate scales of size or hierarchy. Images within the city involve a two-way process between the observer and the environment. Coherence of the image is a result of familiarity, such as a corner café or if the feature is expressive or striking.

17 The image of a city further divided into elements, clarifies the makeup of the city form, these being paths, landmarks, edges, nodes and districts.

4.6.3 Structure and Identity of the image

If one is to stroll through the city, a tall building may represent economic vitality and power thus reinforcing its meaning within the urban context. Therefore, buildings need to express outwardly their function to increase legibility.

18Imageability also referred to as legibility or visibility deals with the physical environment. "That physical object which gives it a high probability of evoking a strong image in an observer" (Lynch 1960). A well-formed city ensures greater participation, with distinctive parts, all inter connected allowing clear orientation. The pattern needs not be plain or obvious but movement channels need to be clear with distinct starting and termination points.

4.6.4 City Elements

Paths: the city, observed from these movement channels, to which the other elements are related. Façade characteristics, planting and concentration of uses may reinforce paths. Paths require points of destination and origin; aligned paths give direction related to the whole. Abrupt directional changes provide sites for prominent structures but otherwise may lead to confusion and direction.

Edges are usually continuous and visually expressive. The Berea ridge to the north of the Doornfontein precinct is one such edge. If visual or motion penetration is able, it is a seam, for example an overhead edge. The road junction at the corner of Saratoga and Harrow roads is an example.

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13 Cowan, R. Architectural Journal (194:24-27)
15 See Drakakis-Smith, D Urban and Regional Change in South Africa (Routledge Publishers, London, 1992)
Identified through analysis is a District. Such elements possess a homogenous character. For example, a neighbourhood build at the turn of the century will have buildings with a distinct architectural style, with tree-lined roads and possibly a church and a school at its centre.

Nodes, with individual character and patterns exist in a district. Hillbrow for example has its own theme, texture, space, building type, activities and degree of maintenance, which are in contrast to the rest of the city.

Nodes need to be visible and expressive, possibly containing a landmark as a reference point. Nodes cannot exists in isolation and require a common relation to others, by providing a service in one node that the other does not posses. Many inhabitants of Hillbrow, travel to Braamfontein to do shopping. This creates urban vitality and inter-dependence.

Edges reinforce and limit a district. Doornfontein intensified and identified by edges, such as the railway line to the south of the precinct. The Berea ridge to the north is another. However, at the same time these are also restricting its expansion in all directions. Positively, it can be concluded from the analysis, this disconnection with the city, somewhat strengthens its theme and adds to the mosaic of the metropolitan area.

A Landmark is an element of individual character and is in contrast with surrounding forms. It requires spatial prominence and richness of detail. Landmarks add clarity to a journey, if a series are identifiable along its length. The Ponte Flats in Berea, due to its size is a prime example of a landmark element.

Conclusion
The elements explained above need to be inter-related to create a cohesive, reinforced urban form. The incorrect placement of a building in a precinct may disrupt and dissolve continuity of such elements. Images that overlap are interrelated by scale and variety of urban form, for example, the street to the neighbourhood, to the city then to the metro area beyond. The greater the detail or form complexity along a path the greater the visual perception, achieved through structural quality, varying form arrangement, colour and texture of facades.

If an area has clear movement channels with an expressive hierarchy of form towards the centre then the precinct would have a greater chance of being successful than one that does not.

4.7 DESIGN GUIDELINES
4.7.1 The urban form

Within the urban realm there needs to be buildings, landscaped areas or elements that contrast one another and are singularly identifiable and expressive. Continuity maybe achieved by the use of a type of paving block or certain specie of tree lining the road.

The introduction of vistas and increased panoramas can increase range and penetration of vision.

4.7.2 Mixed uses and activities

It has been found through analysis that popular districts are those with a high degree of mixture of amenities and services, which in turn draw large amounts of customers at different times of the day and night. The area then becomes safe and pleasant, increasing further its popularity.

4.7.3 Creation of human scale

Urbanity where possible should relate to human scale, not rejecting taller buildings whose lower levels relates to the passer by. The upper levels also require planning, as the skyline is not an arbitrary piece of collective random heights but an important element of scale and urban hierarchy.

It has become apparent through study that street life needs to be re-established, destroyed by massive developments that leave blank and bland frontages and residual space. Large developments such as the Technikon, that fill an entire block seem foreboding, and if not permeable will cause people not to use certain streets leaving an area desolate and unattractive. Freedom of movement needs to be encouraged.

4.7.4 Pedestrian freedom

The foot print study carried out in the urban analysis section of this document, demonstrates how movement systems have been responsible for the location of buildings. Is there an example where a building has been located without adequately providing a traffic system for private cars? Cars are undoubtedly convenient, but as the numbers increase, eroding the pedestrian environment. In many suburbs of Johannesburg the act of road-widening is encroaching on residential plots, decreasing the size of pedestrian corridors.

References

At the street level if buildings are permeable, this will encourage movement and activities.

Movement routes reinforced by the use of landmarks create visual interest and continuity. Corners of movement channels, allow for the placement of memorable features, thus contributing to the character of the precinct.

The clear indication of the centre of a district by height, bulk and imaginative lighting may be an expression of vitality, thus increasing legibility. The placement of new buildings is critical as these contribute to the creation of vistas, gateways or points of termination. Buildings where possible should allow for use on all sides with the fifth elevation, the roofscape not ignored as this aids orientation. Finally landscaping, whether it is hard or soft, formal or informal creates a coherent whole

4.7.5 Access for all

An effective and proficient urban area increases choice of activities and accessibility to both traffic and the pedestrian. Entrances clearly expressed should be points of entry to a precinct. Areas need to cater for night time and weekend activities. From study, urban areas that are used to their optimum levels, crime seems to decrease.

4.7.6 Making it clear

Achieving increased legibility is through the establishment of linked spaces, the sighting of prominent landmarks, the articulation of the skyline and concentration of uses, a function of a building and use can be a landmark within the city.

Memorable features can contribute to the character of the precinct.
Sketch of a building from the turn of the century in the Doornfontein precinct.
Sketch by author.

4.7.7 Lasting environments

Expediency is harmful and encourages wasteful building practices and ultimately the deterioration of the urban realm.

Due to time constraints and cost, older buildings demolished instead of refurbished. Older buildings have the ability and potential to adapt to modern uses, such buildings are visually appealing and have enduring qualities. Even costly materials cannot redeem poor architecture and facade should avoided.

4.7.8 Controlling change, retaining the past

Cites are dynamic yet unprecedented change is dramatic. World-wide in the 1980's, new construction methods meant a degree of forced planning. Preservation allows for a balanced, rich and attractive environment. Johannesburg in the 1960's to the 1970's was the focus of mass development, expressing commercial vitality, ensuring the ease of accessibility for private transport. However, through research, observation and discussion it appears that today it falls short of the public's aspirations.

In a country that relies heavily on its' foreign exchange reserves, would it now make financial sense to upgrade existing buildings with gradual improvements of the existing urban areas. Instead of developing huge commercial complexes, serving only sections of the community?

Presently, Johannesburg is suffering from the donut theory with the CBD not receiving as many development opportunities as the periphery.

Councils need to adopt the similar principal as taken overseas, refusing to grant building permits unless it caters for public usage and contributes to the urban realm.

Upgrading an urban area, if not done in conjunction with others throughout the metropolitan area, may not survive. A holistic approach is a catalyst with coordinated minor initiatives achieved incrementally.

4.7.9 Joining it all together: a conclusion

Urban design is the development of place and the introduction of mixed use. Lessons from the past are beneficial but copies are superficial and prone to neglect.

A new approach maybe to cater more for night-time activities. A building can be a landmark or a backcloth, depending on the location, entrance celebration, height, detail, roof etc. Retaining older buildings, encouraging incremental development and calming traffic throughout are essential factors within my proposal.

Design should embrace public art and establish a civic price. South Africa today suffers from private affluence and public squalor, a tricky situation not easily remedied.

4.8. PLANNING AND FRAMEWORK DEVELOPMENT

By consulting relevant urban theory, a planning system can develop. As the following sections explain.

Through research, previous methods of planning concentrated on landuse patterns on the ground governed primarily by zoning. The new approach to planning emphasises the objective of the plan and possible ways to obtain the best result with continuous monitoring. I have followed this approach within my proposal.

4.8.1 The Planning Process

Urban design involves many tasks, including the identification of various objectives. The clearer the objectives, the greater the chance the project will succeed.

Dividing the framework into three stages is the first step in a planning process, these being the formation of goals, identification of objectives and target setting.

Goals: these are generally abstract and fall into broad categories such as social, economic, and aesthetic concerns. These overlap where necessary and may be referred to as 'areas of concern' (Wilson 1966).

Goals are problems, where possible corrected by the proposed system, which they will manage. These concerns may include public health, education, income and its distribution, mobility and the quality of the environment.

Objectives: are more specific, actual programmes capable of being carried into action, however not completely definite but still wide-ranging.

If for example mobility is the general goal the resultant objectives maybe the improvement of a section of the public transport system. Or the reduction of travel time in the journey to work.

22 Source: Conradie, M Government's Report to the Nation '99.
by the provision of a better road network. Objectives are the result of extensive scanning of the planning system to identify specific deficiencies within the present urban system.

Finally, targets are evolved objectives these represent specific programmes in which criteria of performance are set against target dates or phasing. Targets from the above objectives might include the phasing in of more bus lanes throughout the city or the upgrading of the rail system with five years to ferry and attract more users. It is the attempt to bring together unrelated programmes into a coherent plan.

### 4.8.2 Planning Realities

Who leads the process of development, the politician or the planner? The politician has the ability to order a programme in the short term; the urban designer however has a greater understanding of what people require and subsequent generations as well as the design skills.

Public opinion is diverse with different values; the interests of the family person, a factory worker and a bachelor will ultimately differ. Public opinion and surveys may throw limited and distorted light on planning preferences. Most people experience difficulty in thinking about highly abstract goals that do not concern them immediately because they can not easily imagine long term possibilities outside their immediate range of experience. Because of this, there are differences and conflicts of view. It would appear at a first glance, impossible to devise a satisfactory function combining all preferences of different individuals and groups. This is what a framework attempts to reconcile.

### 4.9 MODELLING OF THE FRAMEWORK

Directly related to the process of modelling a framework, is the urban system that the designer wishes to alter and what questions need to be answered. The model used for my proposal is concerned with the spatial behaviour of the site and activities such as living, working, shopping and recreation and the spaces required to house them.

The types of models I have consulted are dynamic and spatially dis-aggregate, as they attempt to project a picture of the urban area at some future point in time. Showing residential, retail and commercial areas, linking activities and patterns of movement. This produces a proactive framework, working towards a formulated goal.

The model is then included into the planning framework.

### 4.10 PLAN DESIGN AND EVALUATION

The elements represented in the framework will determine the amount of detail shown in the design, ultimately satisfying the objectives within.

The framework and design should represent a continuous trajectory from present into the predictable future. Generated goals and objectives require flexibility, enabling application to alternative future systems; this enables a design to be sustainable.

It is important to note many objectives contain an element of contradiction; it is difficult to reconcile the objective. For example, how to preserve open ground with the objective of freedom of the private environment? or the provision of free movement of private cars while preserving the public realm? What may be required is the favouring of one group above another.

If the price of a development is the return then it is possible to suggest a highway. Should run through the centre of Doornfontein to accommodate more traffic lessening ground level congestion. Such a model cannot reach an optimum result it is too arbitrary.

I have evaluated my Doornfontein design proposal against such aspects as agreeable neighbourhoods, freedom from crime, good education, variety of services etc. There has been greater emphasis on the redistribution of the fore mentioned aspects than cost benefits. This is somewhat idealistic.

**Conclusion**

What urban design tries to control is the complexity of human resources, even the most comprehensive systems fail to predict human emotion and today to suppress this emotion for the sake of the development may prove politically suicidal.

There is always an element of unpredictability and chance, accounted for in the planning. Human values change with time and are never static. There is usually a time gap between design and plan implementation, with controversy as the result.

In the 1960s and 1970s, Johannesburg experienced massive development with the older areas removed. It is interesting to note that today designers are calling for conservation and spontaneity, returning to the `chaos' of the older city.

The difficulty is to reconcile the set of values involving a conflict of right against right. Motorways for instance, effectively cater for traffic and halting the sale of cars is impossible. So, why not spend money on public transport, to convince people that there is a more efficient means of transport available, limiting the need to extend existing road networks.

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24 A model that examines the town or city zone by zone. Source: Hall P (1992)

Urban design even well managed is far from the tidy sequence of the theorists. The framework for the Doornfontein project will follow a logical sequence but it can only aid reality not complete it.
The following collection of sketches represent Urban Theory. The sketches are mainly represent the creation of paths and associated elements.
FRAMEWORK DEVELOPED

5. FRAMEWORK: DOORNFONTEIN

5.1 PROPOSED DEVELOPMENT SCENARIO

It is important to note there are as many solutions to urban regeneration programmes as there are cities.

For a post Apartheid City such as Johannesburg to become desirable to all, reconstruction of the community sectors will be required. One of the most important tasks is the undertaking to increase the density of low to middle income housing closer to and within the city. Opportunities for the increase of population densities along with improvements to communal facilities exist. Higher density living achieved by disregarding, if necessary much of the existing city grid and avoiding residential tower blocks is proposed. Thus, creating a thriving central area surrounded by resident populations living in closely packed clusters of medium rise units.

The ideal vision for any city is one of upper, middle and lower income groups of all colours and ages, living in the innermost zone, this being one to two kilometres from the CBD. Such increased densities should provide the necessary population not only for a CBD that is active in the day and night time, but also provide the base for an improved public transport system.

Throughout the analysis programme a number of crucial aspects emerged as well as the following urban design proposals.

5.1.1 Market Feasibility

A development option conceived on analysis studies and general assumption follows.

The introduction of one or two food outlets, plus mixed-use facilities incorporated into dwelling units and the phasing of an upgrading programme.

5.1.2 Attractive Precinct Atmosphere

The current layout and design of the precinct is not conducive to the provision of an integrated and attractive urban realm. The development of new facilities and redevelopment of the existing creates an attractive and pleasant precinct with a character of its own.

A unique shopping environment along Beit Street with greater linkage with the surrounding sectors is proposed.

5.1.3 Security in the Precinct

According to residents crime has not yet reached alarming proportions, however a visible policing presence combined with a mixed tenant base should create a crime free business, shopping and residential environment.

5.1.4 Improvement of Traffic and Parking Facilities

Presently there is no traffic congestion. The introduction of developments into the area may cause traffic problems to arise, having to meet planning and council directives.

5.1.5 Commitment from all Shareholders

Shareholders include the TWR, TRU and Perskor (LTD) and private individuals.

5.1.6 Retail Development Opportunities

There is potential throughout the precinct for such development, as well as the upgrading of existing facilities to complement the new.

5.1.7 Tenant Mix Requirements

It is essential that all shareholders realise the importance of resurrecting Doornfontein, as a buffer zone it is prone to neglect and decay. It is only through the co-operation and commitment of the local authority, local business, community organisations and developers that Doornfontein will be able to be develop and upgrade to its fullest potential.

5.2 URBAN DESIGN DEVELOPMENT CONCEPT

It is essential that all shareholders realise the importance of resurrecting Doornfontein, as a buffer zone it is prone to neglect and decay. It is only through the co-operation and commitment of the local authority, local business, community organisations and developers that Doornfontein will be able to be develop and upgrade to its fullest potential.

5.2.1 SECTOR FORMULATION

Refer to Drawing on Page 47

Figure

Nine main structuring elements (land parcels) of the study area have been identified to ensure ease of understanding and subsequent implementation of the urban proposal.

1 Central Retail Sector
2 Institutional Sector
3 North West Sector
4 Informal Trading Sector
5 Educational Sector
6 Southern Central Sector
7 East Sector
8 Southern Sector
9 Railway Station Sector

Sector 1

- Provide pedestrian linkage between different spaces and activities, combined with the introduction of passages, courtyards and lanes. These will ease movement through and between buildings in an attractive, protective human scaled environment.

- Strengthen existing retail activities by developing the fringe sectors 7 and 3 to act as gateways and points of termination enhancing a vista creation along Beit Street.

- The creation of a semi-pedestrian streetscape to create a strong anchor for the area, taking into consideration the spill over of this sector into sectors six and two.

- Vehicular and pedestrian conflict to be minimised.

Sector 2

- Provide for the expansion of civic life and the facilities for the exchange of community views by the introduction of squares or courtyards.

1 See Reek, P. Design in the Built Environment (Van Nostrand Reinhold, New York, 1975)
• Enhance interaction with the surrounding sectors by introducing controlled cross movement.

Sectors 3 and 6
• Accommodate the future expansion of Sector 1 in a consistent manner including the creation of the 'shop-house' concept.
• Introduce greater linkages with surrounding sectors by the introduction of pathways and vistas.

Sector 4
Under-utilised and neglected land is evident. Requiring a change in zoning and landuse in this sector, one solution may be the design and creation of an informal trading and mixed-use area.

Sector 5
To reintegrate the existing park for community and school based activities, to ensure public access to green space and sporting facilities.

Currently the vacant site to the west of the Junior School designated as a park, utilised as an extra playground has become fragmented from the rest of the precinct by the erection of a six-foot palisade fence around the perimeter.

Opportunities to reintegrate the site may include the development of sport facilities or a community centre. This will soften the edge and allow cross movement.

Sector 7
Sited on the edge of the study area there is a need to reinforce mixed use and the identification of historic elements. There is also the need to introduce more commercial and retail elements within the district.

Sectors 8
• The reuse and conversion of the existing disused factory buildings into public facilities with the ability to accommodate mixed use.
• Greater interface between this sector and Sector 6, with direct linkages with the precinct.

Sector 9
• The need for the identification and upgrading of the railway station and the possible provision of facilities for informal traders. This proposal however also relies on the upgrading of the railway system as a whole.
• Creation of greater linkages with Sector 6 and a vista along Sherwell Street in a northerly direction terminating at the Technikon with a gateway to the building.

5.3 Site Planning Directives
Refer to Drawing on Page 97.

A design guided and directed in both the built and un-built environment by directives, is vital so the proposal complies with council regulations and that the design is effectively and efficiently implemented.

5.3.1 Built environment
Often ignored is the space between buildings, necessary to determine the nature and shape of the buildings. Hence, the establishment of the following directives

The minimum and maximum heights of the buildings are established. Identified, are certain buildings within the precinct requiring extra height beyond the specified. Built form utilised in the creation of a gateway, to emphasise arrival or position.

Established ‘Builds to lines’ creates the desired environment outside the building envelope. Where necessary and in relation to perceived pedestrian channels, a sidewalk façade or canopy maybe specified as a desired edge to the built form.

Indicated, In addition to the mandatory vehicular entrance points, the secondary or desirable vehicle entrances to development parcels. The ‘line of no vehicular access’ will determine the nature of the degree of the built environment.

Certain areas will require expression more than others. Buildings in such positions are required to be landmarks in the environment; A façade may require particular attention given its prominence.

5.3.2 Un-built environment
Such areas include the environment of public and private space. It is desirable to express the entrance to a precinct. This maybe achieved by using the form of an architectural focus or, and an urban square. It is also desirable to create entrance features at major entry points within the precinct clearly and effectively announcing arrival.

The surfaces of urban squares, parks, pedestrian channels adjacent to urban squares or places of social gathering, treated in a manner that reflects their importance. Such treatment may include surface materials, street furniture, lighting, water features etc.

The proposal is distinctly urban in nature, where parks or courtyards push the built envelope to the edge of the site, typical of most urban settings. Parking provided alleviates the pressure on the road network in the precinct. Internal courtyards easily managed in terms of landscaping and movement provides relief and security, in the urban realm.

5.4 Site Development Parameters
Refer to Drawing on Page 97.

Parameters in association with the Site Planning Directives develop an efficient and effective means by which the proposal, managed and developed from the macro to the micro scale.

One of the most important controls is the defining of an area in to what is public and what is private. The environment consists of public roads, pavements and public areas that are all linked. Off these public routes are a number of specified access points which ultimately establish the sites within the precinct. Sites may be single entities or sub-divided depending on the client’s requirements and the design proposed. Outside of this ‘public environment’ exists the ‘private environment’, consisting of private entrances, road and pedestrian servitude’s and residual space.

5.5 Urban Directives
Every proposal should develop with the mandatory and desired controls, placed on different parts of the site. A development framework generates the desired image of the development.

The framework for the precinct is developed in accordance with mandatory controls, the desired development determined by the appropriate interpretation of the development guidelines, proposals and the desired controls.

5.6 Goals and Aims of the Doornfontein Proposal
• To create a rich and lively environment, to promote mixed use and the creation of a fine grained urban fabric.
• To promote environmental quality by the development of a network of open spaces.
• To ensure a consistency of treatment in respect to landscape, signage and information to encourage legibility.
To design for human scale and quality, the precinct should focus on the pedestrian and not on vehicle movement channels. Spaces contained and well defined by building frontages and form. Active and attractive street frontage created. Gateways, landmarks and focal points introduced and reinforced to create a sense of orientation and place.

5.7 Urban Design and Architectural Objectives
- To establish linkages between a series of public spaces that will integrate the proposed land parcels.
- Enhancement of the Central Spine by introducing outlets to the south side of Beit Street.
- To consolidate informal trading activities within the 'Informal Trading Sector'. Strengthen activity in and around public transport points such as railway, taxis and bus stations. Accessibility to these areas, strengthened by the introduction of greater linkage to the Central Retail Sector and the precinct.
- Currey and Davies Streets to be semi-pedestrianised to permit limited access for service vehicles, to slow down traffic and to regulate the traffic flow along the Central Retail Sector providing additional parking where possible/necessary. To introduce wide landscaped pedestrian sidewalks.
- The creation of a central focal point, identification of a district centre.
- To encourage retail expansion, intensify activities where possible all within walking distance. that utilise the city actually care about it.
- The possible development of the Technikon site, as it is centrally located and is presently impenetrable.
- 'Shophouse' concept is introduced as well as mixed developments with entertainment, retail, commercial and residential components provided on a sectional title basis.

5.8 Town Planning Objectives
- To revitalise and extend the impact of the Central Retail Sector and develop the north and south sections of the precinct as primary supporting areas.
- To develop the South and North West Sectors into mixed use zones and functionally integrate them with the Educational and the North West Sectors.
- Currey street to be converted into an 'activity street' to aid the development of the rear of the precinct.
- Future changes in land use (zoning) throughout the precinct if the demand exists.
- The consolidation of stands where necessary to enable joint developments, intensification of heights, FAR and coverage to be applied.

5.9 Traffic and Transportation Objectives
- New hierarchy of roads to deal with pedestrian and vehicular conflict. Provision of parking by utilising available open spaces to compensate for those lost to street frontage development.
- Possible introduction of traffic clamping zones or 'woomerls' to provide smooth traffic flow and limited conflict along various streets in the precinct.
- The design and development of a new bus stop and associated amenities plus the upgrading of the existing railway station.

5.10 Guidelines for the Doornfontein Proposal
The following guidelines apply to the various sectors of the precinct, however it is important to note that the sectors are interconnected, hence one guideline may equally apply to another, also refer to the goals, aims and objectives.

5.10.1 Informal Trading AND Railway Sectors
- The provision of sufficient space for trading and pedestrian movement.
- Introduction of appropriate support facilities for traders i.e. toilets, water, refuse bins, parking and storage areas.
- No trading in pedestrian flows.
- To promote optimum use of the train station by greater linkage with the rest of the precinct.
- The provision of more access points to the railway station combined with street signage. Further expressed are the Transport nodes by the placement of a spire or minor landmark.
- Greater use of landscaping to soften the edge between the railway reserve and the precinct.

5.10.2 East Sector
- To introduce mixed use, trading, commercial and residential components.
- Possible perimeter block development and active building frontages too physically link the area to the rest of the precinct.
- If required parking pockets to be provided at the rear of the block.
- Introduction of a building height of 2 to 3 storeys.

5.10.3 Southern central AND Northwest sectors
- Developments designed to achieve a sense of human scale and quality. Spaces well contained and defined by building frontages.
- The possible introduction of arcades and urban passages to ensure permeability and accessibility.
- To ensure smooth traffic flow along existing streets.

5.10.4 Central Retail Sector
- To ensure the ease of pedestrian movement with the provision of such spaces as an amenity lane, a window shopping lane as well as adhering to circulation requirements.
- To enforce height restrictions where required.
- By locating magnets on either side of the sector will encourage pedestrian movement through the precinct.
- Parking clearly indicated with directed paths.
- Clearly defined gateways.
- Active building frontages.
- The introduction of a boulevard type of development by using landscaping, furniture, signage etc.

5.10.5 Institutional Sector
- To permit a greater percentage of public interaction within the Technikon grounds by the introduction of facilities and services.
- A greater linkage with the surrounding sectors through the identification of lanes and passages.
- Special architectural response, the expression of entrances and exits through the creation of tree lined lanes and stlying of civic art.
- The possible renovation of the buildings' frontage. Greater linkage between indoor and outdoor spaces.

5.10.6 Southern Sector
- The reuse and renovation of existing structures to provide community based services and facilities.
- Special treatment of building facades by the use of decorative lighting and signage.

5.10.7 Educational Sector
- To open up this sector to the rest of the precinct and surrounding areas through the creation of linkages and outward expression of existing facilities.
- Promote variety of activities and use of the existing facilities.
- More pedestrian friendly environment along the Beit Street edge.
- Possible corner identification through architectural expression, civic art or landscaping thus creating a point of interest.
- Continuance of the Boulevard along the Central Retail Sector to enforce linkage and precinct character.

5.11 IMPLEMENTATION AND PHASING
Refer to Drawing on Page 52.

Adopted are appropriate implementation procedures ensuring sections are realised. Phasing enables the staging, organising and management of the proposed framework. The framework advocates an appropriate development that contributes to the sustainability of Doornfontein. This stage is critical, enabling the accumulation and distribution of finances.

Next in the Document is the Urban Design Proposal.
Location points of Urban Interventions.
Sketch by author
6: URBAN DESIGN DEVELOPMENT

Urban Proposal Explained

CAMPUS CREATED: STAGE 1
Refer to Drawing on Page 65

There is a general shift to abandon the ivory tower, to erode the line between theory and practice introducing controversial elements such as politics and morality into built form, addressing diversity, and uncertainty.

Infill design is required to soften the abstraction of the past. The use of courtyards and lawns has historically always been defining elements expressed by form and location.

In Doornfontein, the Technikon building is monumental, used as an icon for the precinct. The buildings surrounding it are versatile, housing a variety of disciplines.

Within the proposal, there has been the awareness of the destructive capacity of allowing certain elements to dictate design such as traffic and circulation routes.

Promoted, is pedestrian circulation to create a more responsive realm. Resting-places along corridors enable collection and integration of people. Such routes allow people to flow into the surrounding neighborhood to identify further with the existing axes. These axes have dictated open space creation, serving as a focus for each part of the campus.

A typological approach is followed this allowing projects to share architectural elements where formal compatibility then ensures a cohesive layout.

As seen in vernacular architecture, communities develop around a predetermined yard, therefore public and private space is clearly defined with entrance and exit points indicated by decoration or a formal element. Movement channels expressed by the placement of form with gathering points at pathway intersections.

Shop-fronts along Beit Street upgraded to accommodate the new street culture with canopies erected off flat façades.

There is a graduation from the exterior to the interior of the Technikon building, enhanced by the exterior space and its relationship between it and the structure. A sense of progression along movement corridors, created by the placement of focal points, whether they are courtyards or doorways is established.

“A dynamic and visually interesting layout can produce a place of clarity and memorability.” (Tibbalds 1995)

All the introduced structures, where possible orientated to the available light source.

An urban realm in South Africa, which accommodates a wide range of cultures, must respond to shared beliefs and exhibit elements which are honest and identifiable.

The Technikon building is monumental, used as an icon for the precinct. Sketch by author.
BELT STREET AND BEYOND: STAGE 2
Refer to Drawing on Page 66.

There has been an introduction of visually worthwhile elements. The architecture provides a reason to circulate with the creation of places that are intricate and inviting.

The unifying principle is ‘variety’, this arising from the potential exuberance within the area. The grain that once was is re-established creating rhythm and legibility.

The Technikon building formed the focus for the first stage; the second the spreading throughout the precinct of built form and related open spaces, with the creation of balance on both sides of the fore mentioned building.

A canopy overhead or a framed doorway celebrates the leaving or entering of a building, as well as overcoming the relative isolation of certain structures. A bridge has been an obvious answer to connecting the north elevation of the Technikon to the isolated areas beyond, with ground level entry on the south elevation.

Beit Street further pronounced by the introduction of interactive shop fronts along its edge brings into being, a positive realm.

Corners expressed by the positioning of formal elements, a translucent transform of the precinct into a series of boulevards and gateways all increase legibility.

Canopies and balconies soften flat facades from which residents and visitors can survey the happenings below.

Bookshops, restaurants, a laundry and other facilities that allow congregation to take place dominate the ground floors of buildings.

Throughout the precinct, bridges leading to apartments have been erected, these suggest movement and activity with spaces designed to provide stillness and closure where necessary, an act of transition from the public to the private realm.

Conclusion

The proposal is an expression of the urban framework and architectural virtuosity where the simplicity of the first allows the directness of the second.

For further design proposals within Stage 2, refer to Drawings on Pages 57–63.
**PROPOSAL ONE.**

The sketch is an attempt to increase pedestrian activity, especially from the Technikon to the southern part of the precinct. Shown is the manipulation of the Technikon’s façade, a sense of building hierarchy towards Biet Street and the bridge over Beit Street to enhance the link.

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**PROPOSAL TWO.**

The sketch shows an attempt to soften the harshness of the façade of the Technikon, also an attempt to encourage cross movement.
PROPOSAL THREE
The sketch demonstrates how street life may be manipulated in a structural sense, creating a positive urban realm.

PROPOSAL FOUR
The sketch shows the renovation of disused industrial sites at the rear of the precinct, beyond Currey Street.
PROPOSAL FIVE
The sketch shows the creation of a vista along Height Street towards the Technikon looking North.

PROPOSAL SIX
The sketch shows the development of an overhead walkway linking the Technikon with the Berea ridge and Hillbrow beyond.
PROPOSAL SEVEN
The sketch shows the necessary upgrading of the existing railway station, in an attempt to increase the use of rail transport as well as providing points for informal trading to establish.
PROPOSAL NINE
The sketches above are the proposed reuse and renovation of the Perskor (LTD) building along Height Street. The sketch at the top of the page shows the building in its existing state, the bottom one shows the introduction of residential units with metal stairways leading up from the street.
PROPOSAL TEN
As the informal sector has for many become a means to earn an income. The proposal is to create an agricultural project within the city. This would increase the presence of vegetation in the city and provide a service to the community.
The site chosen, is at present mismanaged and neglected by the local council.
PROPOSAL ELEVEN
The sketches show the introduction into the area of an educational and counselling centre. The style of architectural language is in context, and the services provided essential.
7: ARCHITECTURAL DESIGN DEVELOPMENT

7.1 Concept:

"An instrument of Diversity"

As architectural style and theory has progressed, so have societies means of communication. The act of communication is one thing that all people have in common. English for example, spoken throughout the world with communities adapting it to increase understanding and relevance. Yet, the language remains universal. English has evolved over time so it must be with the built form. "Every people that has produced architecture has evolved its own favourite forms as peculiar to that people as its language, its dress and its folklore" (Fathy, 1972)

As a speech is a formal presentation within the act of communication, chatting is more spontaneous, the syntax more dynamic and flexible. Examples of this in the built form is seen where libraries and churches reflect a more formal approach, residential or entertainment areas more informal. Research shows informal buildings are more likely to be an expression of evolved traditions and needs, woven into a physical form (Gilbert, 1982)

Communication is simply the coherent transfer of information from one, the source, to another, the receiver. In architecture, form is a means of communication, but a greater degree of importance attached to the message that structures emit is vital to its legibility and subsequent use. What has made English a useful instrument of communication is its adaptability; syntax easily twisted without losing understanding. However sentences need grammatical structure, without it, it is more haggish. If a structure is legible, a user or passer by understands its existence and visa versa. Could it be that only the local community involved is qualified to express a structural sense of local identity? Designing to represent cultures is not an easy task as we all interpret society through our own experiences, in Johannesburg cultures and beliefs are expressed everyday through dress and language. As a designer, I am a facilitator, attempting to express the desires of "ordinary people"

The structure and materials used, as well as the colours applied all reflect a non-verbal message. For example, transparency on a façade may represent openness; a curve may indicate direction. The formal expression of a structure should be more dependent on context than the "architectural style". A hand gesture by Winston Churchill is very different from the one received from a driver you have just cut off in heavy traffic.

Due to further study into the act of communication, I was able to apply certain theories found, to my proposal in a metaphorical sense. I have listed two communication theories below that have made me more aware of the impact a structure can have on an area and the people that use and live around it.

The study of zones of intimacy or Prosemics is as easily related to buildings as it is to the act of communication. The placement of structure effects a district, buildings positioned inappropriately will create tension and will ultimately effect its interpretation.

As with living creatures violation of space maybe tolerated for a short period after which an act of aggression is usually the outcome. In a structural sense, acts of vandalism and graffiti are an expression of such intolerance.

Kinesics, the study of body movement and its applied message increased my awareness of what messages a building sends to the world beyond. For example, a stepped façade away from the street may indicate a zone of defence, an act of security away from the busy street. A curve placed at the entrance may express an act of welcome or indicate a movement channel.

It was also important to note legibility of form may suffer from external 'noises' (Kretzaman, 1984). For example, the inappropriate use of materials or the poor indication of the entrance may cause a person to circumnavigate a building.

Multi functional buildings are now a prerequisite serving multiple purposes where single use buildings are often under-utilised. Through study and observation it was found multi functional buildings allow the design to be creative and eclectic as each section can be represented differently enabling a community to interact with a building in a more spontaneous manners.

My building is a model on a podium and the hall is the site with the city and people beyond being the context.

7.1.1 REGIONALISM OBTAINED

I have introduced the theory of regionalism as I feel it directly relates to my concept of communication. As explained earlier English has the ability to adapt, to allow cultures throughout the world to introduce elements of their own language without destroying the syntax. Regionalism is the same in many respects. It is the adaptation of universal architectural styles to the cultures within an area leading to a greater degree of legibility.

Cultures being the ethical and mythical nucleus of mankind are after all our reason for existence.

Globalisation is producing a consumerist society reflected in architecture the world over. South Africa has embraced modernisation, with many cultures feeling rejected or lost. Personally, I feel it is necessary to progress and to forge a new identity where certain cultural aspects abandoned for fresh ones. "The region in question aids the development of ideas, simultaneously a region accepts ideas" (Harris, 1960)

Yet, there is a need to retain certain aspects of local culture, as they are our identifying element with the past. Many buildings have attempted this but the outcome has only been a "compensatory façade" (Frampton, 1985)

The "pastiche" in architecture that is so evident today may possibly be the culmination of the enlightenment period, a fascination with worldwide reason. Postmodernism has attempted to disassociate itself with globalisation and transform reality; however, what has developed is a city with an abundant amount of gratuitous images. Whilst buildings are remaining static cultures are evolving within their psychosocial reality.

Regionalism is an active move away from a reactionary and unrealistic existence towards a built form that has the ability to identify with given cultures, avoiding Populism or sentimental regionalism. Regionalism as with any style of architecture has its limitations and for it to achieve success, needs to draw inspiration from universal architecture.
MEDIUM OF EXPRESSION

7.2 Design development

7.2.1 Architectural and Urban Influence

"Musical City" by Christian de Portzamparc
Refer to Drawing si on Page 70.

I have drawn inspiration from this project, as it exhibits elements that have positively contributed to my design process.

"That is why I have become more and more concerned with the notion of fragmentation for, if a project is itself a play of tensions, an area of dialogues, it will introduce elements that stand a better chance of relating to the surroundings" (de Portzamparc. 1985)

The 'Musical City' project is a search for multiplicity of form and spaces relating to an ideal of city life; a design driven by the concept, function follows form.

The architecture is broken up into articulated fragments where traditional and historic elements, interwoven with more contemporary trends and de Portzamparc's personal inventions. The design is redolent with his preoccupation with fragmentation, space, transparency, light, plurality, and tension.

The project is a play of tensions, an area of dialogues, importantly it introduces elements that relate to the surroundings. It is a means of re-creating fragments of the city. "Architectural styles and objects are secondary, for me potential spatial usefulness is far more important" (de Portzamparc 1985)

The starting point of the design was to integrate isolated, static and detracting elements found in the Parc de al Villette.

Axes superimposed to add further to the already existing axis devised by Bernard Tschumi.

The park, given clarity and legibility through the placement of grids and follies around the existing structures, all counterbalanced by the dynamic Cite de la Musique.

Sections of the building are more dispersed with play on linear and curvilinear circulation routes; others fragmented with a ramped gallery offering views over the park and into the city beyond, achieving unity by the addition of an undulating roof.

"Unlike literature, painting or cinema, what we build in cities is addressed to everyone and imposes itself on people who have not chosen to view it as though it were an exhibit in a museum" (de Portzamparc. 1985)

Daniel Libeskind is another source of inspiration. His architecture is progressive and unbiased, his writings inspirational.

Refer to Drawing on Page 69.

His actions summarized as follows.

History is a living experience, an inherited past. To recompose a destroyed city fabric is impossible but we can overlay it as an act of restoration. Transformation of the city's shape must be corresponded by changes in mentality, an optimistic view of radical rethinking of zoning and function.

Historical places and old streets left as they are with an imaginative future given priority. His projects challenge the notion, of the master plan, rather treating the city as an evolving and unpredictable event. The city is a mechanism forged from diverse ideals with a building representing the intersection between past and present.

Libeskind's Art Center in Paris is a myriad of activities with forms relating to human scale, the edges relating to dynamic elements, incorporating the city beyond.

1 Ellis, C Musical City (A.R. 1069:57-63)
Achieving unity by the addition of an undulating roof.

Cité de la Musique. Sketch of an interior elevation by author.

The starting point of the design was to integrate isolated, static and detracting elements found in the Parc de la Villette. Sketch by author.
7.2.2 Further elements of Architectural Influence

Architecture is a universal order, its principles as profound today as they were when building the first shelter. Meaning given to each part of a building, a reason for its creation, but this begins to question existence and that would prove a mind-churning experience.

I refer instead to elements with which I can identify and examples that have proved successful, relating primarily to my process of design.

‘Glen Murcutt in attempting to understand the development of the African City wrote on certain aspects that if used as sources of inspiration could develop a new architectural order.

As a journey, runs deeper into the countryside leaving behind the city what images are reflected back to us representing local cultures and the mixtures developed by the introduction of European styles.

The village, whether it be huts or shacks represents the subsistence existence chosen by many. Such developments express ingenuity in the use of materials and construction techniques.

Then, encountered is the homestead, constructed from rock with the form following European principles, a rectangular form is sheltered using a pitched roof. The materials used are local and the siting determined by the climate. What is unique is the use of corrugated sheeting on the roof with extended roof overhangs to shelter the house from the summer sun and to aid ventilation. Within the house movement is through a series of rooms each representing a phase of transition from public to private space.

Next, the mining settlement consumed by dust with hints of wealth. Corrugated sheeting easily erected clad many skeletal structures. Courtyards and village circles developed to allow the meeting of cultures. The use of the mono-pitch roof enables hot air to rise and escape through the apex, as seen in traditional dwellings. It is interesting to note, that in nature termites use a similar ventilation system within their mounds.

By moving through the country, it is inescapable that European sources of inspiration will exist. Following my research, it became clear there is need to return to the aesthetics of necessity in which the elements of metaphorical expression and practical craft fuse.

Refer to Drawings on Page 73, 74.

7.2.3 Influencing Materials and form

The Electric Workshop, the Gas Works as well as industrial complexes in Johannesburg are architectural elements I have studied and observed.

The Workshop and the Gas Works I believe were an early attempt to introduce aspects of regionalism. The use of tectonic forms and rhythm created on the plan and elevations is indicative of local architecture evolved. The earthy colour of the bricks relates to the landscape and the form to local construction methods and materials. The buildings embody a poetic expression of construction.

When visiting such sites, one's senses are stimulated by the intensity of darkness near the ground level and by the light streaming in through the high-level windows near the apex of the roofs. Heat on the exterior felt as it radiates off the sheets of corrugated iron, in contrast to the coolness of the interior. The aroma of collected dust and the disuse is evident throughout. Simultaneously there is a sense of desolation and confinement as well as a feeling of vastness within the free-standing structures.

The Electric Workshop, Johannesburg. Sketch by author.
The following collection of sketches represent architectural elements that were used as sources of inspiration and reference. The sketches, from left to right represent community creation; path termination; dynamic form creation; corner articulation; vista creation and again form creation.
The following collection of sketches represent architectural elements that were used as sources of inspiration and reference. The sketches, from left to right represent community housing; roof articulation; facade articulation; passage creation; community housing; climate conscious design and path creation. Sketches by author.
DESIGN DEVELOPMENT

1. CIRCULATION
   - Street, exterior, interior, and approach

2. Massing
   - Buildings, volumes, and spatial organization

3. Sectional and Plan views
   - Details, circulation, and spatial relationships

Note: The drawing includes various architectural elements and annotations.
ARCHITECTURAL PROPOSAL
7.4 ARCHITECTURAL DESIGN PROPOSAL

The Structure interpreted.

"Buildings to radiate optimism, with positive sensations of appropriateness, wit and quirkiness which endear them to many". (Erskines 1985)

The architecture participates with eventual owners and is not corrupted by formalism, over intellectualism and pompousness. The development is a living organism with a diversity of facilities, where the structure gives social experience. Inspiration has been drawn from both vernacular and European architecture, the idea is universal but the encoding of the design was reliant on aspects such as regionalism and necessity.

7.4.1 Siting and Ground Floor Plan Explained.
Refer to Drawings on Page
The buildings' layout has geometric formality with a central courtyard allowing gathering and social intercourse. Further, the layout is simple yet heterogeneous, it need not be elegant to effectively serve the needs of the public and residents, providing a feeling of security with the cost effectiveness of repetition.

Corners are articulated to address visual response, leading the eye towards the interior. Pedestrian points are on all four corners expressing permeability where graduation from public to private space is through a series of narrowing pathways. Vehicular access is at the rear of the site away from the residential elements as well as complying with the urban framework.

The ground floors on the east and west are given over to retail and commercial usage. The north, is residential taking full advantage of siting with the manufacturing and arts and crafts sections occurring on the south side relating the surrounding built form.

Permeability and sight is enhanced by the use of glazed facades on both the interior and exterior elevations. Residents are also able to move from the interior to the courtyard beyond.

First and Second Floor Plans Explained.
Refer to Drawings on Page
The first and second floors are for residential use only allowing residents to be away from the street below, but not isolated. Juxtaposed against the mass of brickwork is the transparency and clarity of the metal balconies acting as platforms from which to view the activity below.

Conclusion
The structure is created from visual associations relating to surrounding buildings. There is a balance between variety and necessity.
A structure that is rectangular in form displays construction logic of post and beams, allowing cross ventilation and a succession of functions. The spaces are pragmatic and representative of those who will use them.

Large windows allow light to penetrate the interior with the height of the building ensuring that a section whether it be internal or external does not remain in the shadow of another.

Pitched roofs ensure air circulation and the rejection of warm air through vents at the apex as well as enabling water to flow off and be collected. There is the maximum utilisation of loft space and exposed trusses express the truth of construction.

Bricks, mortar and corrugated iron are the medium of construction. Such materials are a latent sense of the past and the imaging of the future, a conscience of culture, mnemonic.

I have taken my inspiration from the old and the true ignoring much of the new “wrapped in the veneer of tradition in materials with delusions of perpetual newness, they are houses that do not peel or rust and that mask their decline and decay”. (Mockerbee, 1995)

Each element within the building is emblematic of the eclectic abundance of inspirational sources that surround us.

Conclusion

Present is the contrast between construction and a means of protection, reflecting the desire for security and traditional representation in the form of a courtyard.
7.4.3 Elevations Explained.
Refer to Drawing on Page 91.

The posture of the building is a celebration of a degree of permanence with corner aspects expressing varying tones of importance. The subtraction of form as well as the rhythm and continuity of the openings and repetition create the language of the facades. The tone is mellow yet defensive with entrances set back from the street.

The architectural language differs from section to section, with the residential elements less formal and the manufacturing and arts and craft sections being more rigid, achieving legibility by adjusting the style of language according to the use.

Conclusion

Living creature's fine down towards the extremities, eyelashes, and wings etc justifies the progressive thinning out of a building towards its boundaries, hence the exteriors are decorated by balconies, porches, flues and exhaust pipes, roof-lights etc.

Design Sketches
Sketches by author

Sketch designs
Sketch by author
Conclusion

My project attempts to increase awareness of the sensory and emotional relations a user has with a building, as it is an act of self-consciousness.

Design sketch for an overhead walkway.
Sketch by author.
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