Regenerating The Underutilised

A Catalytic Intervention For Reactivation Within a Revived Urban Green Artery

Rick Musiker • 386869
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_____________________________________
Rick Musiker
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at the University of the Witwatersrand, Johannesburg, South Africa, in the year 2015.
This thesis focuses on identifying and satisfying opportunities through the regeneration of underutilised land in our cities. It investigates the potential and benefits of transforming these land parcels to maximise accessibility, use, and function. Consequently influencing urban renewal and urban connection.

The thesis initiated through identifying the possibilities and opportunities which exist upon the Killarney Country Club site in Lower Houghton, Johannesburg. Its location, size and exposure are key to its potential, furthermore its current status makes transformation plausible and desirable. The Killarney Country Club is a sizeable strip of greenery centrally located in the Johannesburg context. It offers significant linkage opportunities throughout Johannesburg and high public exposure. In its current state it is heavily underutilised, allowing access to a select elite minority and in turn creating a stifling element in the city.

Theoretically the Killarney Country Club can be described as a Heterotopic space. A space without a place, juxtaposing its context and existing as a world within a world. However, it ultimately possesses the ability to transform to meet the needs of an evolving society. These heterotopic
concepts, debated by Michel Foucault, are influential theories which I explore during this thesis.

The success of this regenerative intervention requires a comprehensive urban framework which lays the foundations for an equally significant architectural intervention at the core of the proposal. The urban intervention includes elements of linkage, activity, high density, mixed-use and place making. The improvements see the transformation of the Killarney Country Club into an accessible, connected and active city node, which embodies a social and recreation facility. The facility promotes outdoor activity, wellness and interaction amidst a heavily altered and environmentally conscious new urban context.

To attract and generate activity to the site I have proposed a public square at the heart of the transformation, on-to which is placed a catalytic architectural intervention for regeneration. The proposed built intervention is a Social + Recreation Complex which is comprised of three interconnected but separate buildings. The Social + Recreation Centre, the Conference + Events Centre and The Exhibition Centre. The building becomes a threshold between urbanity and nature. It promotes, and most significantly, initiates and sustains the regenerative transformation.
• North in all drawings, maps and diagrams is assumed to be up, unless otherwise stipulated.

• All drawings, maps and diagrams are assumed not to scale unless otherwise stipulated or supplemented with a scale bar.

• Acronyms are sometimes used in this document. Some of which include:

  C+EC - Conference + Events Centre.

  KCC - The Killarney Country Club.

  NTS - Not To Scale

  RP - Recreation Park.

  S+R Complex - Social and Recreation Complex.

  S+RC - Social and Recreation Centre.

  TAC - Transvaal Automobile Club.

  TEC - The Exhibition Centre.
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1. Introduction
REGENERATION | OPPORTUNITY
As the title suggests my thesis is driven by regeneration. Regeneration of the underutilised. With underutilisation comes opportunity. Opportunity for intervention, for change and for improvement.

THESIS INITIATION
There are three major drivers in an Architectural thesis; theory, program and site. The thesis is often initiated by one such category. My thesis initiated with the site and the other two drivers responded appropriately to the site’s requirements and opportunities. I noticed a site in the centre of Johannesburg, South Africa, which I believed was underutilised in its current state and which I thought possessed immense opportunity for regeneration and in turn urban renewal.

SITE
The site identified was the Killarney Country Club in Lower Houghton, formerly known as The Transvaal Automobile Club. A large, privatised strip of greenery reserved for a select elite minority.

TRANSFORMATION
My thesis focuses on regenerating this strip of prominent property. Transforming it into a publicly accessible facility, which both activates the space as well as enhances its urban context and the city in which it exists. The intervention is intended to not only improve the land onto which it is placed, but also the lifestyle and quality of life of the people who use it.
The desire for regeneration of the underutilised led me to thought provoking theoretical studies to enrich this endeavour. Some of which include Michel Foucault’s writings about heterotopia, concepts for creating sustainable urbanism, ideas for regeneration, as well as studies of quality public spaces/squares.

**PRINCIPLES OF REACTIVATION**

I adopted five principles for reactivation. The principles being linkage, activity, densify, multi-use and place making.

1. **LINKAGE**
   along the Sandspruit, a water source which passes through the site and continues north to meet the Braamfontein Spruit, and thereafter the Jukskei River in Paulshof.

2. **ACTIVITY**
   generated through social and recreational means on and around the site.

3. **DENSIFY**
   along the edges of the site and its surrounding context.

4. **MULTI-USE**
   and multi-zoned facilities throughout the densification process.

5. **PLACE MAKING**
   at the heart of the intervention, as a catalyst and anchor for the project and urban framework.

**URBAN FRAMEWORK**

The immense size and locality of the site afforded the opportunity for an urban intervention. This includes the revival of the Sandspruit into a recreational green artery through the city [which can function as an alternative green means of transportation and linkage] as well as the transformation of a large amount of the Killarney Country Club land into a wellness and recreational facility. In addition, the conversion of low density single residences into high density residential, commercial and retail prospects. Furthermore, the formation of a public square at the epicentre of the urban framework. The introduction of a high street and an urban promenade. As well as the amendment to surrounding roads, to help alleviate traffic congestion as well as to become more pedestrian and cycle friendly.

**BUILT INTERVENTION + PROGRAM**

The main focus for the built intervention embodies two of the principles mentioned above; activity and place making. I have designed a public square at the centre of the proposed scheme. Adjacent to which, and to anchor the square, I have placed my architectural built intervention. Intended to be a catalytic and iconic building, which is to be the driver in the regeneration objective. The public square and the building are intended to, amongst other things, attract activity, which in turn will spread into the rest of the site and urban context. I will refer to this building as the Social + Recreation Complex. This complex comprises of three separated but interconnected buildings. A Social + Recreation Centre, a Conference + Events Centre and The Exhibition Centre.
‘A Club, such as the Transvaal Automobile Club now becomes, is always a reflection of the ideas, enthusiasm and industry of its members and it cannot endure without progressing. Much has been achieved and it is on this that we must build, for, let us admit it freely, much needs to be done. These pages have given some idea of the Club as it is to-day. But fine as it is, its potentialities are finer. They are in our hands now. Let us exploit them to the full.’ (The Transvaal Automobile Club 1952, Page 12)
2. THEORETICAL CONTEXT
INTRODUCTION

Time, space and society have an interesting and interwoven relationship. As one develops, progresses or changes it directly affects the other. It is these outcomes which must be considered to achieve equilibrium within, and the optimal functioning of, our cities. As a result of time transformations and society developments, many of today’s cities possess underutilised land. These underutilised portions of land can in many ways be akin to and described as heterotopic spaces, Michel Foucault’s concept of space without a place. Fundamentally these heterotopic underutilised spaces hold opportunity for land recycle. Considering the state of the planet and its alarming environmental status, these land recycles have to employ innovative approaches to redevelopment and reuse. A new and sustainable urbanism is necessary to improve land use, for urban regeneration and for the wellbeing of the environment. In this essay I will elaborate on the above by; first discussing Michel Foucault’s theory of heterotopia, then explore the opportunity of heterotopic space with regard to land recycle. Thereafter I will introduce my site driven thesis for the regeneration of The Killarney Country Club, likening it to a heterotopia and reviewing its opportunities. After which, I will debate the necessity to intervene on underutilised green spaces in cities, leading me to the issues that humanity and specifically Johannesburg are currently experiencing. Finally, I will discuss the approaches of sustainable urbanism for redevelopment, in an attempt to delineate key principles which will guide my design thesis intervention for a sustainable, urban renewal intervention of land recycle for underutilised land.
HETERO TOPIA

In the past, the various centuries have had differing obsessions. The nineteenth century had history, the twentieth had the epoch of space and the twenty-first century has for argument sake, technology (Foucault 1984). Although not necessarily the current obsession, space is one which still has great relevance in our growing cities and ever changing societies. The lack of space, the use of space and the quality of space is constantly debated. The question arises, if it is at all possible to adequately plan space for a hundred years’ time without the luxury of a time machine. It is most likely with development in human life, human ways, human comforts and human desires, that what was appropriate a hundred years ago in terms of spaces, spaces allocation, severances and connections may very well not be applicable in current times. It is these spaces which hold opportunity and which we must identify, study and transform. These places which in most instances can be described as heterotopias. A as space without place. Michel Foucault believed ‘that the anxiety of his era had to do fundamentally with space, no doubt a great deal more than with time.’ (Foucault 1984 Page 2). In current times this notion could be contested, however I think it worthwhile investigating Foucault’s conjectures and applying them to our current surroundings and situations.

According to Michel Foucault space in its nature is still sanctified. He suggests that our lives are ‘still governed by a certain number of oppositions that remain inviolable.’ (Foucault 1984 Page 2). Some examples of these are the relation between ‘private and public space, between family space and social space, between cultural space and useful space, between spaces of leisure and that of work.’ (Foucault 1984 Page 2). The space within which we live is heterogeneous. We do not live in a void, within which are placed individuals and things. Rather ‘we live inside a set of relations that delineates sites which are irreducible to one another and absolutely not superimposed on one
another.’ (Foucault 1984 Page 3). Michel Foucault discusses sites, their space and their relationship with all other sites. Sites which ‘suspect, neutralise or invent the set of relations that they happen to designate, mirror or reflect.’ (Foucault 1984 Page 3). These spaces, ‘which are linked with all the others, which however contradict all the other sites, are the two main types.’ (Foucault 1984 Page 3). Foucault suggests that there are fundamentally two types of space. Utopias and heterotopias. They do not suggest positive or negative but rather they are ways in which to differentiate and categorise spaces. ‘Utopias are sites with no real place.’ (Foucault 1984 Page 3). They are fundamentally unreal spaces. Contrary to this is the description of heterotopic space, a real space. ‘Places that do exist and that are formed on the very founding of society.’ (Foucault 1984 Page 3). Although it may be possible to indicate the location of these places, they reside outside of other spaces. These places are innately different from all of their neighbouring sites and they seem to exist with little connection to the spaces around them. Such is the heterotopia.

**PRINCIPLES OF HETEROTPIA**

In his essay *Of Other Spaces: Utopias and Heterotopias*, Foucault describes heterotopias according to six principles. The first principle explains that all cultures constitute a heterotopia and that these heterotopias can be classed into two main categories. Heterotopias of crisis and heterotopias of deviation. Heterotopia of crisis relates primarily to the ‘so-called primitive societies’, (Foucault 1984 Page 4) ‘they are privileged or sacred or forbidden places, reserved for individuals who are, in relation to society and to the human environment in which they live, in a state of crisis.’ (Foucault 1984 Page 4). In our modern and accepting society these heterotopias of crisis are slowly disappearing and transforming into heterotopias of deviation. Heterotopias of deviation are those in which individuals whose ‘behaviour is deviant in relation to the required mean or norm are placed’. (Foucault 1984 Page 5). The second principle states that as society changes it can make an existing heterotopia function in a very different manner. ‘Each heterotopia has a precise and determined function within a society and the same heterotopia can, according to the synchrony of the culture in which it occurs, have one function or another.’ (Foucault 1984 Page 5). Thus we witness the change in nature of a heterotopia as
well as the possible change in its location as society transforms. Principle three explains that ‘the heterotopia is capable of juxtaposing in a single real place several spaces, several sites that are in themselves incompatible’. (Foucault 1984 Page 6). Therefore it exists in juxtaposition to all spaces around itself. The fourth principle argues that ‘heterotopias are most often linked to slices in time’. (Foucault 1984 Page 6). In one sense the heterotopia can showcase an accumulation of time, most clearly illustrated in a museum or library. On the other hand there are those heterotopias which illustrate ‘time in its most flowing, transitory and precarious aspect, to time in the mode of the festival.’ (Foucault 1984 Page 7). The latter description of heterotopias is innately temporal. Principle five explains that ‘heterotopias always presuppose a system of opening and closing that both isolates them and makes them penetrable.’ (Foucault 1984 Page 7). Generally a heterotopic site is not freely accessible. Entry is controlled. ‘To get in one must have certain permission and make certain gestures.’ (Foucault 1984 Page 7). One can liken this to a world within a world. The final and sixth principle illustrates that heterotopias ‘have a function in relation to all the space that remains.’ (Foucault 1984 Page 8). In one respect it is to ‘create a space of illusion that exposes every real space, all the sites inside of which human life is partitioned.’ (Foucault 1984 Page 8). Or on the contrary, to create a space that is ‘other, another real space, as perfect, as meticulous, as well arranged as ours is messy, ill constructed, and jumbled.’ (Foucault 1984 Page 8). To conclude and summarise his conjectures, Foucault explains that ‘the ship is the heterotopic par excellence.’ (Foucault 1984 Page 9) ‘It is a floating piece of space, a place without a place that exists by itself, that is closed in on itself and at the same time is given over to the infinity of the sea.’ (Foucault 1984 Page 9).

**HETEROTOPIA AS AN OPPORTUNITY**

All cities, no matter how diverse, how efficient or how successful possess heterotopic spaces. Within these heterotopic spaces exists opportunity. Opportunity for change and improvement, an opportunity for land recycle. Land Recycle is the idea of reinventing underutilised or misused land. Underutilised land is land which does not fulfil its potential. This could be from a resource, locational, rights and or user perspective. In our fast-paced and ever-changing society the ability to adapt is
paramount. Growing population pressures, environmental considerations, interests, and time often render some properties and their functions inappropriate. It is these sites which are the opportunity for change, for redevelopment and ultimately urban renewal. All too often we look to the peripheries of the city for vacant land, which is a rare commodity in recent times. We should rather be working from inside out. Searching for spaces to reinvent within a city, which can in turn enrich their surroundings and city’s functionality. Urban renewal and urban regeneration before new urbanism. Furthermore in this context it is important to consider the concept of ‘highest and best use.’ This concept is usually associated with property investment. (Sussna 1989). However the essence of the principles can be applied to architectural intervention on land that already possesses a function. It is a way of predicting that a proposed land recycle will not only be better than the current use of the land but rather insures that what is proposed is the best option to maximally make use of the land in an appropriate and considered manner for today and for the future.

A suitable case study which substantiates the land recycle initiative is The High Line in New York City. Although it is a built structure and not necessarily land, it was the natural landscape which ‘reclaimed the monumental structure’, (Field Operations and Diller Scofidio + Renfro 2008 Page 7) that motivated its visionaries to intervene for its future. The idea of recycle was the essence of the project and its current function is similar to that of a traditional land or park. I would like to use it as a case study to illustrate the power of, recycling space and identifying opportunities within our cities. The High Line was formally a freight rail system which had not been used for more than two decades prior to its redevelopment. It was considered wasted space and an eyesore and ‘was one court decision away from demolition,’ (Field Operations and Diller Scofidio + Renfro 2008 Page 9) when a small group of New Yorkers realised that its presence presented opportunity. The first phase officially opened in 2009, the second in 2011 and the final phase in 2014. It currently functions as an elevated park which weaves its way through skyscrapers in New York’s West Side. It offers the public a place to escape the chaos of the city and get in touch with nature. In addition it hosts picturesque views of the Hudson River and the New York skyline. A place to relax and appreciate the
city. It has generated activity in a previously tired neighbourhood and added substantial value to the surrounding properties. (Field Operations and Diller Scofidio + Renfro 2008). This project took something that was underutilised and transformed it into major asset and attraction for the city of New York. It is testament to the opportunity of reinventing underutilised or misused land through the process of land recycle.

**THE HETERPTOPIC KILLARNEY COUNTRY CLUB**

I would like to suggest and investigate The Killarney Country Club as a heterotopia. Located in Lower Houghton, Johannesburg, The club is a private, elitist, social and sporting facility (predominantly angled towards golf). The Killarney Country Club correlates to four of Michel Foucault’s six principles of a heterotopic space. It firstly relates to the third principle of juxtaposition of spaces. (Foucault 1984). The Killarney Country Club is an exemplary example of this. Its rolling abundance of space contrasted with the apportionment of erven in the surrounding suburban areas, its natural greenery contrasted with the built fabric of the surrounds, its private use compared to the public nature of the neighbouring streets and malls as well as its slow pace contrasted with the fast pace beyond its fences. Secondly the golf course physically embodies Foucault’s fifth principle, which discusses the notion of a world within a world which is impenetrable for the outsider. According to Foucault, heterotopias are not freely accessible. (Foucault 1984). The Country Club respects this description as it is exclusionary by nature. It is a private club which requires one to have membership or to be invited by a member in order to utilise its facilities. It is surround by a fence which makes general freedom of movement across the site impossible and in turn creates a stifling element in the city. What takes place inside the fences has little relationship to the outside world. Thirdly his sixth principle suggests that a space can ‘have a function in relation to all the space that remains’ (Foucault 1984 Page 8) and achieve perfection in contrast to our ‘messy, ill constructed, and jumbled’ being. (Foucault 1984 Page 8). The principle speaks about perfection in contrast to our chaotic lives and reality. (Foucault 1984). The golf course is the epitome of this, creating a surreal sanctuary like atmosphere within its industrious surroundings. Its perfect layout, its accurate measurements and precision required to play the game,
its pristinely manicured grounds, strict regulations and its aspirational appeal. Lastly and consequently most importantly is Foucault’s second principle. Mentioned out of its numerical context for application purposes. This principle confirms the hypothesis of the Killarney Country Club as a heterotopic space and establishes the premise for my thesis. The principle states that heterotopic spaces have, ‘a precise and determined function within a society and the same heterotopia can, according to the synchrony of the culture in which it occurs, have one function or another.’ (Foucault 1984 Page 5). In other words as society changes so to can and should the heterotopic space within it alter to meet the needs of its morphed society and surroundings. It possesses the ability to change its nature and or alter its location. (Foucault 1984). It is this principle which confirms for me the heterotopic nature of the Killarney Country Club as well as captivates my attention to the opportunities and possibilities which exist within the Killarney Country Club confines.

**THE OPPORTUNITY THAT IS KCC**
The Killarney Country Club site possesses immense potentials beyond those which are currently being practiced upon it. This sixty-five hectare, green strip of land is currently underutilised. It is a site for the exclusive, limiting access for the majority of the population. Losing members as well as a huge drop in yearly rounds, the club has arrived at times of financial difficulty and is struggling to survive. Should nothing be done, the site will remain underutilised. On a positive note, the site is centrally located within the Johannesburg context, possessing linkage possibilities into the greater city network, specifically with Sandton to the North, Johannesburg City to the South as well as to Edenvale in the East and Northcliff to the West. In addition it is one and a half kilometres from Rosebank, Johannesburg’s emerging third central business district. It is easily accessible with high exposure as it sits along the M1 freeway and has multiple on and off-ramps which feed in major East West arterial routes bisecting the site.

The Killarney Country Club was originally established within different urban criteria which could tolerate its existence. But it has remained dormant within a changing urban environment. Couple this with the unfavourable heterotopic descriptions communicated above and we notice the ever present pressures forcing and requiring
the reconsideration of the land use. This reconsideration presents monumental opportunity. Opportunity for revitalisation, transformation and ultimately improvement. My thesis intention is to re-think the Killarney Country Club’s function, use and purpose within the city of Johannesburg, in an attempt to regenerate the land for the betterment of the people, their city and the environment.

**GREEN INTERVENTION**

Some may question the intervention upon green space in a city. It is true that in most cities, green spaces are a rare commodity and should be scrupulously protected. Green spaces create variety and a welcomed interaction with natural systems within a city. Take for example Central Park in New York City. The concrete jungle’s main attraction is the mass of greenery at its heart. A place where people come to relax, exercise, picnic and stroll. A place of interaction with nature and with people. However not all green spaces in cities are successful. In some cases they can even be detrimental to the city, attracting vagrants and illegal activity. Bryant Park in New York City was a good example of this during the 1980’s and an even better example of the possibility to turn a place around (Madden 2001). In the early 80’s Bryant Park was overrun with drug dealers and not an inviting setting. Fearing for their safety, most honest citizens and tourists would not venture into the park (Madden 2001). With careful analysis and mapping of the scenario, Project for Public Space was able to uncover the issues relating to the lack of proper use. The issues included overgrown greenery and small entrances, the park lacking ‘a place to buy food, no events to act as a draw,’ (Madden 2001) the perception of criminal activity and no place to sit. In an effort to transform the park the hedges were trimmed to increase visibility and the entrance widened to make the park more welcoming. Food kiosks were placed at the entrance of the park and movable chairs were scattered around the park, allowing people to sit where they wanted. In addition activities were planned for the space and a restaurant and small café were built at the back of the park (Madden 2001). ‘The park now functions extremely well as a busy and safe oasis in the heart of Manhattan.’ (Madden 2001). This case study is an example of spaces and often green spaces in cities which become underutilised and or used in the improper manner but which possess the potential through intervention to become
great spaces, which in turn enrich the city and the surroundings in which they exist. With enough foresight, belief and action, green spaces can be reinvented. What is evident is that there is no doubt that greenery in the city is imperative for a multitude of reasons, including a place to relax, health considerations, cleansing of the air and biodiversity, amongst others. However it is important to have something which enriches the green spaces and makes them interactive. Something which activates the green space, attracts people and activity and makes what was once an underutilised green space into an active arena to interact with people and nature. The key to a successful space relies on, sociability, uses and activity, access and linkage as well as comfort and image (Madden 2001).

THE HARSH REALITY
In addition to the principles discussed above apropos turning spaces around, it is imperative to understand humanity’s current situation to ensure that whatever is suggested as a land recycle for The Killarney Country Club and other sites is in line with the future protection and development of life and living beings. ‘We now realise that we are in the midst of a crisis that worsens with every passing day’. (Steffen 2011 Page 17). We have entered a precarious time period. A period within which it is critical that we reflect on the way we occupy this universe and make the necessary adjustments to ensure that life continues to flourish on this earth for millennia to come. We are faced with issues of climate change, ozone depletion, rising seas and the weakening of natural systems, among other major concerns. Most of which can be attributed to the negligent ways of the human species. So many of our daily activities, some more direct and obvious than others, contribute to the destruction of the environment around us. ‘It’s crystal clear that humanity has pushed nature beyond its biocapacity and has overshot the planet’s limits.’ (Steffen 2011 Page 17). It is imperative to learn, educate and publicise these contributing factors in an attempt to make people aware of their impact and develop new strategies of existence which are parallel with the environment’s prevalence.

JOHANNESBURG’S CURRENT SITUATION
In an attempt to extrapolate change we need to analyse our cities. I will focus on Johannesburg, as Johannesburg is the location for my thesis intervention. The city
of Johannesburg is an example of a city that is dispersed. This is a result of many factors during its development, including the discovery of gold, apartheid and the development and spread of suburbs in conjunction with the popularisation of the motor vehicle. Johannesburg does not have a functioning city centre but rather several smaller central business districts. These being the former central business district of Johannesburg city, Sandton and the infant in the group, Rosebank. These have little connection or linkage to one another. The large majority of Johannesburg constitutes low density suburban areas. Citizens live in one suburb, work in another, play in different location and shop elsewhere. Johannesburg's public transport, although majorly improved, is far from perfect or sufficient and if afforded the opportunity most people would prefer not to take public transport. Thus the reliance of and the use of the private motor vehicle is the primary mode of transportation around the city. This has major drawbacks and environmental impacts. Furthermore, because of its dispersed nature, the city is not very pedestrian or cycle friendly. Sidewalks are not a comfortable size nor inviting and one is constantly flanked by fast moving traffic. In addition, bike lanes are at an absolute minimum and bike awareness even less so. As a result, cycling on the roads is very dangerous. All this raises sociability concerns. Compared with other world leading cities Johannesburg has limited person on person interaction. Limited relationship with for example a local baker, considering the distances we travel to and from work we could visit any number of bakeries during our journey. Our loyalty and dependence is lacking. It is imperative that Johannesburg begin to address these issues and address them in a sustainable manner. If we want to be that world class city we advertise, change is in order.

**A SUSTAINABLE URBANISM**

Johannesburg requires a new way of development and urban renewal. I would like to initiate this new movement with the execution of my thesis. The land recycle of The Killarney Country Club requires something new, something different, a new type of urbanism, a sustainable urbanism. Much of the recent focus in the architectural and sustainable realms discuss and illustrate how one can make a building more environmentally friendly. However, in comparison, little attention has been given to the community scale. If one overlooks the community and urban scale, one ends
up in a position that, while the building may achieve a net zero carbon emission factor, the urban condition relies on people driving thirty-five kilometres to use the building. (Farr 2008). This seems counter-intuitive. We have to be more thoughtful in our reform. The times in which we live offer exciting opportunity ‘to rethink where and how we live, work, play, and shop.’ (Farr 2008 Page 41). An opportunity to reduce environmental harm and enhance our lifestyle. Many leaders and governments are beginning to ‘recognise the power of thoughtful urbanism to induce people to voluntarily live a more human-powered and less resource-intensive lifestyle.’ (Farr 2008 Page 10). Sustainable urbanism is upon us.

‘Sustainable urbanism is an integration of walkable and transit-served urbanism with high-performance buildings and high performance infrastructure.’ (Farr 2008 Page 10). ‘The precautionary principle demands the reform of land use and infrastructure as part of a comprehensive reform agenda targeting critical health and climate issues.’ (Farr 2008 Page 10). It outlines five criteria, amongst other things, to create a functional, independent and modern urbanism. These principles are compactness, completeness, connectedness, sustainable corridors and biophilia (Farr 2008).

**THE PRINCIPLES**

The first principle is compactness and refers directly to high density conditions. Sustainable urbanism is not achievable at low densities. High densities encourage walkability and increases the chances of finding a job close to home. Increased density also affects efficiency of transit, support for local businesses and efficient use of services and resources (Farr 2008).

Completeness is the second principle and implies that one should very rarely have to leave one’s neighbourhood. Completeness ensures that a neighbourhood or urban intervention has diversity in its makeup and in essence a mixed use functionality. ‘Neighbourhoods exists to meet both one’s daily needs and one’s needs over a lifetime.’ (Farr 2008 Page 45). ‘An increasing number and variety of commercial uses in a neighbourhood centre increases its completeness.’ (Farr 2008 Page 45). Supplement this with civic spaces, leisure activities, shopping facilities and religious institutions and the neighbourhood starts to function efficiently and conveniently. A neighbourhood should offer a full range of housing types to reduce the relocation of
individuals to new neighbourhoods during their lifetime. Although movement to other areas does extend social connectivity, it also makes it difficult to stay directly connected with relationships made in the previous neighbourhood. (Farr 2008). ‘Maintaining life relationships with family and friends has been shown to increase health and longevity.’ (Farr 2008 Page 45).

The third principle supports connectedness within a neighbourhood and connection to other neighbourhoods. Neighbourhoods should as far as possible promote walking, biking, riding and even using a wheelchair to get around. Should one need to connect with another neighbourhood there should exist an efficient transport network which links these sustainable neighbourhoods. Sidewalks, small streets, multiple intersections and reduced speed vehicular traffic is encouraged to promote efficient, sustainable and comfortable movement through a neighbourhood. (Farr 2008).

The fourth principle promotes sustainable corridors and generally refer to the conventional public transport systems. However it can also extend to include green networks which link neighbourhoods and districts. Most cities contain natural green networks, which have been severed for a multitude of reasons. Re-establishing the continuation of green networks encourages walking or cycling from one place to another, generating an alternative to vehicular movement. ‘Transit corridors are the backbone of sustainable urbanism, linking neighbourhoods together with districts and other regional destinations.’ (Farr 2008 Page 46). New developments have to be transport ready. They need to predict the future and tie into potential connection opportunities. These corridors need to link to employment centres and satisfy transport demands (Farr 2008).

The fifth principle is biophilia. ‘Biophilia is the name given to the human love of nature based on this intrinsic interdependence between humans and other living systems.’ (Farr 2008 Page 48). It attempts to connect humans to nature. Conventional early urbanism obliterated natural features for developments and profit generating schemes. Clearing land, drying swamps and diverting rivers to generate new land for expansion. Built land was and still holds higher values over open land. As a consequence to our built-up cities most people live a daily life without any contact with nature. This disconnect with nature
is increasingly thought to contribute to a number of psychological issues. These include a lack in productivity, increased stress and many general health concerns. (Farr 2008). Sustainable urbanism tries to reconnect people with nature and natural systems. The benefits thereof are extremely far reaching. Improved health, improved activity, longevity, and even increase property prices. In order to reignite this relationship between humans and nature it is important to expose society to its benefits. In addition biophilia tries to combat the notion of ‘out of sight out of mind’. Many people are so disconnected that they have no idea where their water or food or energy comes from or where their liquid or solid wastes go. (Farr 2008). Biophilic design attempts to expose people to these processes and in turn reduce man’s negative impact on the environment. Biophilia is therefore a way of helping the environment to help ourselves.

**CONCLUSION**

Therefore in conclusion I have investigated the plausibility and opportunity for land recycling of underutilised land. I initiated by studying Michel Foucault’s theory of heterotopias. In so doing recognising that heterotopic space within our cities affords opportunity for intervention. Understanding this notion, I ultimately exposed the potential in the rethinking and regeneration of the underutilised and heterotopic Killarney Country Club. Viewing it as a stifling element in the city as well as an opportunity for change. Tackling this project requires understanding of how to appropriately transform a green space, our planet’s current sustainability issues as well as identifying Johannesburg’s current state of affairs. I identified a possible starting point for a solution to the Killarney Country Club which utilises ideas of sustainable urbanism for land recycle. The project therefore attempts to revitalise Killarney Country Club to become more accessible and more sustainable. Ultimately showcasing a new way of building which integrates ideas of new and sustainable urbanism, wellbeing, productivity, biophilia, biodiversity and education. Taking a privatised, under-utilised green space and transforming it into a multi-use and multi-purpose facility. A facility which provides a variety of uses and opportunity for Johannesburg and its citizens.
3.

SITE + CONTEXT
INTRODUCTION

SITE CHOICE

The site, The Killarney Country Club, was the main driver and initiator for this thesis. For many years, whether it be passing by the site or through engaging in a round of golf, I have constantly admired the site and its potential. I felt that in its current state it was not fulfilling its potential and that much more could be achieved with this land. I could not help but wonder about the opportunities which this site possessed. Thus through this thesis I have had the opportunity to explore these possibilities.
Fig. 3.2. Johannesburg Locality Map - Indicating the Killarney Country Club

Fig. 3.5. Gauteng

Fig. 3.6. Johannesburg
HISTORY OF THE KCC

The Killarney Country Club, previously the Transvaal Automobile Club or TAC has an interesting history dating to early 1900’s when the club started with the intention of growing the interests of “automobilism” (The Killarney Country Club 2015). In 1916 the club moved from the city centre to Cooke’s farm (The Killarney Country Club 2015). At that time, the Killarney suburb as we know it, was also referred to as Cooke’s farm, named after its owner at the time, William Cooke (Dukes Court 2015). The TAC was involved in the ‘compilation of road maps, organising hill climbs and campaigning against speed limits’ (The Killarney Country Club 2015). In 1917 with the growing need to provide social and sporting amenities the club opened its first bowling green and followed that with badminton courts and croquet lawns (The Killarney Country Club 2015). More bowling greens where added and in 1926 squash and tennis courts where built, followed by a swimming pool and ‘the first ten-pin skittle alley in the then Transvaal’ (The Killarney Country Club 2015). In 1929 the golf course was opened. With time the motoring aspects of the club become too onerous and the club forgo the responsibilities thereof. Cooke’s farm was owned by the African Realty Trust and in 1956 the ‘Club secured a long term lease with option to purchase’ (The Killarney Country Club 2015). In 1957 the Club become the owner of its property (The Killarney Country Club 2015). However this was short lived, because in 1965 as a result of the city’s growing traffic issues the City Council proposed certain motorways which would pass right through the Club’s property (The Killarney Country Club 2015). This motorway would later become known as the M1 freeway. The road proposal forced the Club, in 1970, to relocate to its current location in Lower Houghton. The
Club secured a fifty year lease expiring in 2020 which was subsequently extended to 2040 (The Killarney Country Club 2015).

KCC FACILITIES

-_An 18-hole Robert Trent-Jones designed golf course.
-_Four bowling greens.
-_Eight tennis courts.
-_Six squash courts.
-_A small gymnasium.
-_Swimming pools.
-_Conferencing and banqueting facilities.
STATUS OF THE CLUB

The Killarney Country Club has in theory and on paper fantastic facilities. However over the past couple years the club has been in a decline. They have lost a large number of members and are struggling to survive. They have arrived at times of financial difficulty. As a result their facilities have become aged and tired. In addition the golf course and the club’s property have become underutilised. At the best of times, with a full field, a golf course will see \( \pm 128 \) players on the course at one time. If we consider the Killarney Country Club’s 65 hectares of land, the result is 0.5 hectares or 5000\( \text{m}^2 \) of land per player at anyone time. Adding to this underutilisation is the fact that the Club and its land, although owned by the government, is privatised which is largely only accessible to the elite minority. Combine this with the fencing around the \( \pm 6.6 \) kilometre perimeter of the property and what one finds is a massive stifling element in the centre of the city.

The golf course was originally established within different urban criteria which could tolerate its existence. But it has remained dormant within a changing urban environment. As a result pressures forcing and requiring the reconsideration of the land use are ever present.

FIG. 3.14. DIAGRAM ILLUSTRATING THE UNDERUTILISED STATE OF THE KILLARNEY COUNTRY CLUB

DESCRIPTION

SITE

The Killarney Country Club site is by in large a natural green area. The large majority of the site is comprised of manicured green grass and a variety of tree and plant life. In addition the Sandspruit, a natural water source, passes through the entire length of the site. The site is divided into three portions by two major roadways which bisect it. Tunnels under these roadways connect the three site portions. The M1 freeway runs adjacent to the site for its entire length. The site plays host to additional sporting

\[
\begin{align*}
65\text{HA} & \div 128 \text{ PLAYERS} = 0,5 \text{ HA | PERSON}
\end{align*}
\]
facilities and has very little built structure upon it.

**IMMEDIATE CONTEXT**

The Killarney Country Club’s immediate context is largely freehold title, low rise residential accommodation. In addition to this, to the South of the site is the Killarney Mall, to the North and North-East of the site is James and Ethel Gray Park and to the East, on the opposite side of freeway, is mostly commercial office buildings. There is additional commercial office space along Glenhove Road and there are multiple religious institutions in close proximity to the site.
MACRO + SUB-MACRO
CONTEXT MAPPING
Fig. 3.20. Greater Johannesburg’s Golf Course Densities, Networks + Land Mass Occupation

Johannesburg Boarder
Main Roads
Secondary Roads
Golf Courses

Site - The Killarney Country Club
Golf course indicated with 3km radius surrounding it
Cumulative area of Johannesburg’s Golf Courses
The map on the previous page illustrates the Johannesburg boarder, greater Johannesburg's main & secondary roads as well as greater Johannesburg's golf courses. The interaction between the golf courses & the roads illustrate the golf courses connectivity & urbanism. The termination of roads, passages & movement by the immense size of the golf courses is evident. I have placed 3km radius zones over each golf course. This firstly illustrates the immense number of golf courses in the greater Johannesburg region, secondly it shows where the greatest intensity of golf courses occur & thirdly it shows the closeness & proximity of golf courses to each other. Lastly in the bottom right hand corner of the map I have super-imposed a diagram of the cumulative size of greater Johannesburg's golf courses when placed together. The intention here is to illustrate, by means of interpretable comparison, the percentage of land utilised by golf courses in the greater Johannesburg region.
The site is centrally located in the Johannesburg context and close to Rosebank, Greenside, Parktown, Killarney, Houghton, Hyde Park, Melrose, Illovo and Sandton to mention a few.

**LOCATION**

The site possesses linkage possibilities with Sandton to the North, Johannesburg City to the South as well as to Edenvale in the East and Northcliff to the West.
The entire length of the site sits adjacent to the M1 freeway and has ±3km of valuable freeway frontage and exposure. In addition the site is bisected by multiple freeway on and off ramps. Two such off ramps link into major East | West arterial routes, them being 11th Avenue and Glenhove road.
The site is one and a half kilometres from Rosebank, Johannesburg’s emerging third central business district and consequently a major trigger event in the city. A trigger event can be an occurrence, a building, a development or the like which possesses immense significance. It is surrounded with great enthusiasm, anticipation and in turn potential for its surrounding areas. A trigger event activates interest, influx of people, investment and improvements in an area.
The Sandpruit which initiates just South of the KCC, enters the site and runs the entire length of the site before heading North past Melrose Arch, Sandton, Woodmead and Kyalami. This natural water course possesses significant urban opportunities.

**Urban Influence**

The vast size, central location, close proximity to major transport routes and its tie to the Sandpruit afford the site incredible opportunities for urban intervention and positive urban impact. The result being city improvement for Johannesburg’s citizens and the environment.
MAPPING
A very large and rather narrow site (65Ha), which is split into three portions by intersecting roadways. The three sections are connected by tunnels under the roadways.
This map illustrates the site's connection to major roadways in Johannesburg. The site is flanked by the prominent M1 freeway, with multiple on/off ramps located along its length. In addition, the site is bisected by three main through routes which aid its connectedness through Johannesburg.
The site context has a predominantly small and dispersed grain pattern. In addition, this map highlights the huge space that the KCC occupies.
This map illustrates the dominance of low density residential in the area. In addition it also highlights the commercial nature of properties which flank the freeway. Furthermore, it highlights the lack of high density residential, retail and entertainment facilities in the area.
The Sandspruit water course runs through the entire length of the site. A prominent feature on the site which unfortunately is inaccessible to the general public as it is contained within a restricted access site. The site therefore severs the continuity of this water passage.
18 Hole, par 70 golf course, designed by Robert Trent-Jones. Consisting of four par 3’s, twelve par 4’s and two par 5’s. It provides a good base for a potentially remodelled golf game and course.
The outcome of this analysis shows the space required for a golf hole and in turn the possible proximity of building adjacent to a golf facility. In addition, it also highlights the left over space on this property and the current inefficient use of land. An issue which can be addressed and improved upon.
The Killarney Country Club has many unfavourable conditions for a formal 18 hole golf course. Firstly it is very narrow, meaning golf balls are hit onto adjacent fairways and sometimes beyond the course boundaries. Secondly it has great noise disturbance from the freeway. Thirdly it is bisect into portions and connected by undesirable tunnels, which taint its continuity. Finally the Sandspruit which runs through the course is contained in culverts which divides the golf course.
4. Project Objective
Objective

Responding to the issues described in the previous chapters regarding the Killarney Country Club, the project objective is to, as the thesis title suggests, regenerate the underutilised Killarney Country Club. To take this privatised piece of land and make it accessible to a much larger populous. In so doing attracting people and activity to the site. Dismantling the site’s boundaries, allowing it to integrate into its surroundings, enhancing and stimulating its context and in turn creating linkages with the rest of the city. Furthermore to analyse, take advantage of and fulfil the potential and opportunities that this site possesses. In so doing transforming this property into a central city node, enriching the city, enhancing its public nature and giving back to its people. All the while acknowledging, preserving and enriching the natural beauty of this green lung which finds itself in the middle of a complex metropolis.

The regenerative intervention should in some ways respond to and respect the history and legacy of the TAC now KCC. Which tried a hundred years ago, to provide social and sporting amenities to a community and society which lacked such amenities. It seems today, after one hundred years, we are still left with the same shortage of public social and recreation facilities.
PROPOSAL

Considering the nature, size and location of the site to propose one standalone building to achieve the above objective would not suffice. The regeneration proposal requires a complex combination of both architectural highlights and a comprehensive urban intervention. I therefore propose, which will be discussed in a lot more detail in the Urban Framework chapter, numerous urban interventions which combine into a comprehensive urban framework for the surrounding area and the city.

The urban framework includes elements of linkage, activity, densification, mixed-use and place making. Which translate to; the revival of the Sandspruit water course into the SandSpruit Spline, transforming the Killarney Country Club into a multi-discipline public wellness and recreational park over the 65Ha site, namely Recreation Park, the densification and introduction of mixed use development to the properties adjacent to the site in the form of high density residential accommodation, hoteling, mixed-use retail and commercial elements. Further elements of the proposal see the creation of an urban promenade along the edge of the site and the transformation of Lower Houghton’s 5th and River Street, into a high street. To sustain, support and initiate these urban interventions I propose a public square at the heart of the urban transformation, on to which I will place a catalytic, iconic and anchor building, which is to be the driver in the regeneration objective. This building in turn becomes my architectural design thesis exploration.

Please Note:
• Recreation Park, the SandSpruit Spline, the densification and mixed-use proposals, the urban promenade, the high street and the public square will be elaborated on in the Urban Framework chapter.
• The building will be elaborated on in the Building Brief + Program chapter.
URBAN FRAMEWORK
INTRODUCTION
Considering the immense size, length and location of the site which I chose to work on, the potential for urban intervention and urban improvement was ever present. In fact the success of the thesis and selected built intervention rely heavily on a comprehensive, user-friendly urban intervention.

I have developed an urban development proposal which is made up of multiple interventions, implemented in various phases.

LINKAGE _ SANDSPRUIT REVIVAL

BACKGROUND
The Sandspruit [Sand Stream] emerges on the southern slopes of the Witwatersrand, in the Wilds in Johannesburg (Raubenheimer 2015). It flows past the Killarney Mall, through the entire length of The Killarney Country Club, across the James and Ethel Grey Park, past Melrose Arch and into Sandton at the Innersfree Park (Raubenheimer 2015). The spruit continues past the Ernest Ullmann Park on its way through Rivonia, after which it flows under the N1 Highway and Witkoppen Road to confluence in Paulshof where it merges with the Braamfontein Spruit to flow into the Jukskei River, on its way to the Hartebeestpoort Dam, thereafter ultimately finding its way into the Crocodile River (Raubenheimer 2015).

Many years ago it was possible to hike the entire distance of the Sandspruit, from the slopes of the Witswatersrand all the way to the convergence of the two spruits in Paulshof. However today, ill maintained and obstacle ridden the spruit sees little use. The City of Johannesburg is no longer looking after the river as they did in the past. Parts of the spruit have been fenced and in some cases illegally privatised by homeowners whose properties boarder the spruit. In addition ‘the river suffers from a rubbish problem, as litter dropped in the streets is washed into the storm-water drains and thence into the Spruit’ (Raubenheimer 2015). Furthermore chemical and sewage spills occur regularly compromising the ecosystem (van Wyk 2014). The spruit is also disturbed by negligently planned construction taking place close to the spruit (Raubenheimer 2015), with contractors allegedly dumping rubble into the river. In addition the catchment areas are increasingly getting paved over (Raubenheimer 2015). ‘This increases sudden runoff from rainfall, resulting in ever higher flash floods, river erosion and lower water levels between floods’ (Raubenheimer 2015).

It is clear that issues surrounding the survival of the Sandspruit are critical. The river is losing its natural beauty and all the ecosystems which connect into the river, being plants, insects, birds, animals etc., are in great danger should the situation not be dealt with soon.

REVIVAL VISION _ SANDSPRUIT SPLINE
As part of the urban intervention of my thesis I would like to revive the Sandspruit. Initially imposing regulations which prevent the chemical and sewage spills, enforce sanctions on negligent developers and contractors and insist that all privatised fencing of the spruit be removed. I would like to see the spruit return back to its natural essence.
The revival will also see the spruit transform into a recreational green artery which runs through the city and feeds my thesis intervention on the Killarney Country Club site. The Sandspruit becomes a space which can be celebrated and utilised by the public. Incorporating walking, running and cycling tracks. Encouraging people, for example, to walk dogs and picnic alongside the river. The SandSpruit Spline does not only become purely recreational but also functions as an alternative green means of transportation. People can use the SandSpruit Spline [The Spline] to cycle or run to and from where they need to go.

The reviving of spruit creates a linkage opportunity throughout the city. It addresses sustainable urbanism principles of connectedness and sustainable corridors. In addition it now means that my proposal for the Killarney Country Site (which follows) is accessible to a much larger population. It encourages integration and connection of people and the city.

**SANDSPRUIT SPLINE WITH ACTIVATION NODES ALONG ITS LENGTH**

- Sandspruit Spline
- Node Along Sandspruit Spline
- Site, Killarney Node - Recreation Park

**FIG. 5.1 . ACTIVATION NODES ALONG SANDSPRUIT SPLINE**
ACTIVITY _ SPORT + WELLNESS

SITE REJUVENATION _ RECREATION PARK

As described in chapter 3, the Killarney Country Club, then the Transvaal Automobile Club was first established for ‘automobilism’. However their focus quickly shifted to social and recreation development. Today the club provides golf, tennis, squash and bowling facilities, albeit rather tired ones.

The golf course is the main facility of the club and in turn it occupies most of the 65Ha site. Golf by its nature is a difficult sport to gain access to and as discussed this club is particularly underutilised. I would like to see the land being used in a much more diverse, inclusive and active manner. I therefore propose a multi-purpose, social and recreational wellness facility, Recreation Park, which incorporates multiple social and recreational activities taking place on the site and alongside each other. Some of the proposed facilities included running, walking and cycling tracks through the site, which can continue into the above mentioned SandSpruit Spline. Along the paths one can find secluded bird watching hides as well as artistic local sculpture, both of which create refreshing resting spots. Additional activities include indoor and outdoor gyms and new tennis, squash and bowls facilities. Recreation Park realises sustainable urbanism principles of completeness and biophilia. These days’ more and more people are living indoor city lives. It is vital to encourage and provide, particularly in our South African climate, publically accessible, outdoor health and fitness activities and facilities.

To accommodate the implementation of the new activities the golf course will be transformed into a full length 9-hole golf course. The game of golf has seen a considerable decline in the last couple years. The decline can be attributed to amongst other things, the substantial amount of time the game requires as well as being an extremely expensive sport. The new course becomes much more accessible to the average golfer and especially to the person trying to learn golf. The nature of golf clubs makes it extremely intimidating to step onto a golf course if you are trying to learn the game. This new 9-hole golf course is hoped to eliminate these issues, becoming a much more relaxed and inviting facility. The 9-hole nature also makes it ideal to play before, after or potentially during work.

We thus witness the transformation of the Killarney Country Club into a public, active central park.
Running, Walking + Cycling Paths

Adjusted Site Boundary

New 9 Hole Golf Course Layout

Recreation Park + Activity Diagram

Fig. 5.2. Plan of Recreation Park - Activity Diagram

0 50 100 200 400 800m
Johannesburg is an extremely dispersed city and with this dispersion comes extensive road and transportation systems. Add to this an inefficient public transport system and the city is left with a large number of privately owned motor vehicles which are most often transporting one individual.

With the current status of the global climate we have to rethink transportation. The SandSpruit Spline addresses this issue, functioning as an alternative eco-friendly method of transit and sustainable corridor. However there is more that can be done and in this case I propose densification. Addressing sustainable urbanism’s principle of compactness. Densification results in a high concentration of people in an area, reduced utilisation of precious land resources and helps build communities and community living. Couple densification with mixed-use zoning and one is left with a live I work I play I shop environment, realising sustainable urbanism’s principle of completeness. This increases convenience, improves lifestyle and reduces the need for harmful commuting.

Johannesburg’s property market is currently lacking in residential accommodation. There is an opportunity for and I have proposed, the densification of properties adjacent to the Killarney Country Club. This densification will be implemented in various phases. The first phase will be medium rise, high densification along 5th Street, Lower Houghton and the Recreation Park. The mixed use program will include high density residential, commercial office space, hoteling and retail components. Additional phases include developing the properties on the opposite side of the 5th Street and densifying properties along Recreation Park towards Killarney Mall. This densification and mixed-use proposal described and, illustrated on the following page, functions as a transformation in its own capacity. However it initiates a change which once established has the potential to grow westwards to meet Oxford Road. Creating important linkages in the intervention’s immediate context and most importantly with emerging Rosebank. This potential future phase/growth and its simplistic zoning is illustrated in a diagram two pages ahead.

**FIG. 5.3. TYPICAL SECTION THROUGH THE DENSIFICATION ON EITHER SIDE OF 5TH STREET.**

- 4/5 Levels Along the High Street
- Building Height is Reduced;
  - Next to Existing Neighbours.
  - Along Recreation Park to Allow Views to the Park from Buildings Behind.
Existing Building Footprints

800 Meter Radius walking Distance
= 10 Minute walk

Proposed Mix Use Density framework
High Density Residential
Commercial Office Space
Retail

Fig. 5.4. Plan indicating proposed Density + mixed use framework
Fig. 5.5. Plan indicating suggested improvements to on/off ramps and connecting roads.

SUGGESTED IMPROVEMENTS TO EXISTING ON/OFF RAMPS + CONNECTING ROADS

- On/off ramps for improvement
- Important feeder arterials for improvement

FIG. 5.5. PLAN INDICATING SUGGESTED IMPROVEMENTS TO ON/OFF RAMPS AND CONNECTING ROADS
The image above illustrates diagrammatically how I see the urban renewal intervention develop in the future. Densification and mixed-use initiates with the High Street and gradually expands to meet Oxford Road, an already established commercial road. My forecast sees the roads perpendicular to Oxford Road becoming predominately commercially zoned. In essence an expansion from Oxford Road to meet and link with the High Street and M1 Freeway. The roads in between these commercial streets, running parallel to Oxford and the High Street, are in-filled with high density residential. This proposed growth zone transforms into a high density and mixed-use area which showcases and forecasts a new way of South African living.
PLACE MAKING + LINKAGE

- URBAN PROMENADE, HIGH STREET + PUBLIC SQUARE

Place making is a very important element in successful, vibrant and unified cities. Successful place making gives a city or area identity and a reason to visit. As part of my urban renewal interventions I have proposed many elements of place making. Three of which are an urban promenade, a high street and a public square. Elements which address sustainable urbanism principles of completeness and connectedness as well as introduce elements of sociability, activity, access, linkage, comfort and image.

**URBAN PROMENADE**

The urban promenade is a walkway along the proposed high density development, overlooking the adjacent Recreation Park. The Urban Promenade stretches from Glenhove Road to the Killarney Mall. The lower ground floor of the densified development opens up on to the promenade. Restaurant and small shops are periodically positioned along the promenade. The promenade links Recreation Park to the Killarney Mall and makes the area pedestrian friendly. It is a fun and convenient outdoor experience which interfaces urbanity with nature. In addition its presence and usability add value to the adjacent high density accommodation.

**HIGH STREET**

The High Street is proposed for 5th and River Street, Lower Houghton. Initially along 5th Street, for the portion between Glenhove Road and 11th Avenue, after which the High Street will extend over 11th Avenue and merge with the altered River Street, which continues the High Street to meet Riviera Road at the Killarney Mall. The proposed High Street is intentionally positioned one line of buildings up from Recreation Park and the Urban Promenade. The perforation and separation of the buildings from one another, at regular intervals, promote interaction between the High Street, the Urban Promenade and Recreation Park.

The realisation of the first phase of the High Street is scheduled to coincide with the construction of the high density proposal for the Eastern side of 5th Street. Glenhove Road and 11th Avenue are major East West arterial routes and Riviera Road is an exceptionally busy arterial. All three arterials feed on and off ramps to the M1 freeway. These arterials cross the proposed High Street at just under one kilometre intervals and will support the High Street. Furthermore the portion of road proposed for the High Street has a relatively minimal gradient making it easily traversable. My scheme for the transition proposes the paving of the road to reduce vehicle speeds as well as the widening of the street to accommodate larger pavements, include cycle lanes and off street parking. In addition to implement high density residential on the upper levels with retail trading on street level. Furthermore the mixed use character provides place for commercial offices and commercial retail on the lower levels. The High Street should both activate and link the neighbourhood to the surrounding areas, making my built thesis intervention more plausible and sustainable.
Fig. 5.8. Plan indicating Urban Promenade & High Street implementation & location.

Fig. 5.9. Plan showing detail of High Street & Urban Promenade - NTS.
The public square is one of the most important elements in the design of the city (Moughtin 2003). It is a very prominent setting for social gatherings, social interactions and intern activity. It is most often located at the heart of the city, giving it prominence and serving as a vital place maker for successful buildings and areas which surround it. Hence it is why I have decided to incorporate a public square at the heart of my regeneration project, hoping that the square coupled with Recreation Park can initiate activity and revive the underutilised.

I have proposed a public square to be placed amidst the densification proposed along 5th Street. The square is located almost equidistant between Glenhove Road and 11th Avenue, the two busy arterials. The square intersects the Urban Promenade as well as the walking/running/cycling paths of Recreation Park. It is important that the square has a relationship with all elements of the Urban Intervention; the Densification, the High Street, the Urban Promenade and Recreation Park.

The squares implementation was utilised and envisaged to attract people and in so doing reactivate the Killarney Country Club / proposed Recreation Park. However the square is not the sole attraction or activator. In the same way that people from the square bleed into Recreation Park so too does Recreation Park support the square. For example people cycling or running through Recreation Park will filter into the square and sustain it. The square becomes a meeting point, the departing point and the centre of attention. I have thus decided to place my architectural built intervention on this prominent square.
Fig. 5.11. Plan Locating Public Square within Urban Framework

Fig. 5.12. Zoning Surrounding Public Square - NTS
GREEN CITY | PHASING

GREEN SPACE INCREASED

One of the very important elements in this urban proposal is the presence and preservation of green space in the city. The presence of green areas in a city not only adds beauty to the city, but provides a place to interact with nature and the outdoors. This in turn has proven benefits in health, well-being and productivity.

Part of the urban regeneration proposal, and illustrated in the diagrams below, is the increase in green space of the Killarney Country Club. The proposal constantly encourages the preservation of and interaction with natural greenery.
Fig. 5.15. Phasing of Urban Framework

Phase 1
Phase 2
Phase 3
Phase 4
The Promenade Du Paillon in Nice, designed by landscape architect Michel Pena, is a good example of an urban intervention of regenerative transformation. The newly opened Promenade Du Paillon is a public urban park intended for social and recreational activity within the city. The promenade covers 12 hectares and stretches 1.2 kilometres through the heart of Nice (Hin 2015).

The opening of the promenade is part of many years of work by the Nice authorities to ‘improve the quality of life and infrastructure in Nice’ (Hin 2015). The promenade is built upon and sits over the notorious Paillon, a river which used to separate Old Nice from new Nice (Hin 2015). This river often used to, because of its steep mountainous entry into Nice, flood its banks unannounced, devastating the city and its surroundings. Since the 1800’s Nice’s authorities have been trying to cover up the river (Hin 2015), in an attempt to avoid damage and loss of life by the sudden floods. They have finally succeeded and in so doing created an iconic asset for the city.

The Promenade Du Paillon starts at Promenade des Anglais, where the Paillon reaches the sea (Hin 2015), and ends at the National Theatre of Nice. The urban park is a combination of paved walkways, manicured green lawns and exotic botanical planting, flanked on either side and intersected at multiple crossroads by reduced speed roadways. Along the promenade there are various entertainment and recreational elements, including water features which you can stroll through, animated water features which you can stroll through, animated water features which you can stroll through.
fountain shows, ‘children’s playground games shaped like various water animals’ (Hin 2015), ‘exhibits indicating what the Paillon river bed looked like before it was covered up’ (Hin 2015), resting spots, covered areas and on either side of the promenade, the beautiful architecture of Old and New Nice. As a tribute to the Paillon River the theme for the promenade is water. Everything from paving materials and patterns, to sea animal themed playgrounds and of course the water features are inspired by flowing water. In addition ‘the promenade is equipped with smart underground networks (fibre optics, internet networks, electricity, etc.) and may therefore be used as a venue for future events’ (Unknown 2015c).

The city of Nice has taken what used to be an unsightly dangerous river and revived it into an active green space where its locals and visitors can enjoy relaxing social and recreational interaction, all the while enhancing and benefiting the city with elements of natural beauty. The promenade has been such a resounding success that there are study’s underway regarding its possible expansion to over double its current length (Thurlow-Wood 2014).
The Braamfontein Spruit [spring of the brambles] is arguably one of Johannesburg’s most popular rivers (Unknown 2015b) and has recently been acknowledged as one of the world’s longest parks, extending approximately 20 kilometres. The spruit a tributary of the Jukskei River and initiating in Berea, runs through Auckland Park to meet the Westdene and Albertsville Spruits in Parkhurst. Before merging, the Westdene Spruit passes through the popular Melville Koppies and the Emmarentia Dam. The three streams flow through Delta Park on their way through the northern suburbs to confluence with the Sandspruit in Paulshof (Davie 2009).

The Braamfontein Spruit is a good example of a natural parkland in an urban setting that is utilised by the public.

However it was not always as popular. Lack of maintenance saw the spruit and parkland surrounding it heavily overgrown, this coincided with and resulted in an increase in crime along the spruit and the Braamfontein Spruit being declared a no-go zone by Johannesburg residents. It was in the 1970’s, when the first clean-up effort was organised, that people start returning to the Braamfontein Spruit (Clarke 2015). In 1981 ‘the municipalities of Johannesburg, Randburg and Sandton joined forces to open a hiking trail’ (Unknown 2015a), along the Braamfontein Spruit. The spruit has gone through difficult times since the introduction of the hiking trail, mostly issues of crime and pollution, however today the spruit seems to be on a positive way forward.
Today the spruit is an active green corridor traversing through and connecting parts of Johannesburg. This natural area is home to a wide variety of flora and fauna, birdlife, fish and small wildlife. The spruit is used by cyclists, runners, walkers, dog walkers and people just looking to immerse themselves in nature. The spruit is conveniently accessed at multiple points along its distance, with parking facilities and even some newly established cafés along the way.

Although the spruit possesses greater potential than has been achieve upon it up until now it is still extremely encouraging to see the Braamfontein Spruit being utilised in the positive manner in which it is currently being welcomed by the Johannesburg Public. Furthermore it is proof that urban parks do benefit cities and their public as well as offer an alternative ecofriendly method of transportation through a city. Spaces like this are rare and have the potential to connect the city as well as offer social and recreational facilities and activities in a natural setting. It is important for the wellbeing of the environment, cities and their citizens that we preserve, look after and optimize these areas.
6. BUILDING BRIEF + PROGRAM
The brief is to create a building on the proposed public square that functions as an anchor to the square. The building’s main function is to attract people to as well as support, sustain and engage with the proposed regeneration proposals of the public square, Urban Promenade, Densification, Recreation Park and the Sandspruit Spline. In so doing, the building has to support the square and itself as a destination and node within its proposed Recreation Park, SandSpruit Spline and new urban framework. It in turn becomes a key element and contributor to and catalyst for, the regeneration objective.

The building is both intended to provide social and recreational stimulation as well as preserve, administer, improve and foster social interactions and recreation in Johannesburg and its greater context. It needs to encourage social interaction and exchange between people of all ages, races, sexes and backgrounds as well as provide a place where knowledge can be exchanged. In addition the building needs to serve the public and thus be publicly accessible where possible and where appropriate.

PROGRAM _ SOCIAL + RECREATION COMPLEX

In response to the building brief and in turn the regeneration objective, I propose the Social + Recreation Complex.

The Social + Recreation Complex consists largely of three interconnected but separate buildings which together function as the anchor building to the public square and regeneration intervention as a whole. The three buildings are made up of a Social + Recreation Centre, a Conference Centre and an Exhibition Centre.

USERS

The buildings are by in large public facilities and in so used by the public. A large amount of users are people who use the proposed upgraded and transformed...
Killarney Country Club site, i.e. Recreation Park. As well as people attracted by the various urban intervention proposed. Namely the public square, the SandSpruit Spline, the urban promenade, the high street and the residential, commercial, hospitality and retail elements proposed for the area.

**SOCIAL + RECREATION CENTRE**

The main building in the complex is the Social + Recreational Centre. Its purpose is to advertise, promote, administer, coordinate and control social and recreational activities on the proposed improved Killarney Country Club site [Recreation Park], of the proposed urban interventions [The SandSpruit Spline] as well as in Johannesburg and Johannesburg’s wider context. The building functions as an initiation vehicle for social interaction and exchange. In addition social and recreational activities take place in the space and are also organised to initiate from the space or adjacent square.

**S+RC PROGRAM**

**INFORMATION & WELCOME CENTRE**

The Social + Recreation Centre is to house an interactive information and welcome centre where people can gain access to information regarding social and recreational activities and events taking place, in Recreation Park, along the SandSpruit Spline as well as in and around Johannesburg. It also exhibits general information about Johannesburg, such as maps, places of interest, facts and news. This space should be informal and encourage social interaction.

**POP-UP SHOPS**

Pop-up spaces are required for marketing of social and recreational activities and events. They will also serve as a platform to pitch the development of social and recreational endeavours envisioned for developing areas. In so doing, they will attract interest, support and potential funding. These spaces need to be flexible in size and have a high level of public and user exposure.

**PLAYPODS**

PlayPods are informal spaces where people can socially and/or recreationally interact. The PlayPods offer a space where business people can conduct meetings and/or work. They should be of varying sizes and offer the opportunity for a multitude of types of interaction. In addition they should also be movable to allow maximum flexibility of the space they occupy, as well as allowing the spaces to constantly change and remain exciting.

**DIGITAL LABS**

The building requires spaces for publicly accessible computers, tablets and interactive digital equipment. A space
where occupants can conduct work, gain access to the internet, interact digitally and enjoy next generation recreation.

**ADMINISTRATION | OFFICE SPACE**

The office spaces are required for the administration staff of the Social + Recreation Complex, Recreation Park, The SandSpruit Spline and Johannesburg’s social and recreation committee. The space needs to be more privatised than the rest of the building, with controlled access. The administration levels need to house private and open plan office space, board rooms, hot-desks, reception areas and kitchenettes.

**THE SOCIAL CLUB**

The Social Club is a semi-private entertainment and function area. It needs to house a bar, lounging areas and informal discussion areas. In addition it is important that The Social Club engage with its locality. The Social Club is a space for occupants of the building to enjoy time off, relax, entertain and interact with co-workers and guests. In addition, it should be able to be rented out for private functions and events.

**RECREATION PARK CLUBHOUSE**

The Recreation Park Clubhouse is exactly as its name suggests. It is a space for the users of the Recreation Park and SandSpruit Spline. A stopping point and a place to relax, grab a drink and or something to eat and enjoy the natural surroundings. It needs to house the pro shop for checking in for the various sporting facilities as well as change rooms, some managerial and operational offices, a kitchen, dining areas and a bar.

**CONFERENCE + EVENTS CENTRE**

The conference centre provides conferencing, event and function facilities. The spaces are available for hire and accommodate multiple different sized, flexible, multi-use spaces and rooms to accommodate all user requirements. The conference centre is intended to attract people and activity to the site. In addition, the Conference + Events Centre functions as a social, commercial and entertainment facility which is intended to supplement the Social + Recreation Centre.

**C+EC PROGRAM**

**RECEPTION & ENTRANCE LOBBY**

The Conference + Events Centre requires a reception upon entry into the building as well as a generous lobby space which can accommodate large numbers of people.

**MULTI-PURPOSE CONFERENCE & FUNCTION ROOM**

The C+EC needs to provide a very large multi-purpose conference & function room. This multi-purpose room must be flexible in its usage of space and allow for a variety of seating and conferencing arrangements. The space should be directly related to the entrance lobby, which can serve as a break away area for the function room. This function room needs to accommodate food and beverage preparation areas, service areas as well as storage facilities.

**AUDITORIUM**

The C+EC needs to accommodate a large raked auditorium which can seat ± 225 people.

**BREAKOUT SPACES**

The C+EC requires indoor and outdoor breakout spaces to cater for large numbers of building users. These space not only
allow good and easy circulation but also create opportunity for interaction and discussion between the occupants of the building.

**SMALLER DISCUSSION ROOMS**
The C+EC needs to provide smaller discussion rooms. These rooms must be flexible and multi-use in nature. They need to provide spaces such as boardrooms where meetings can take place, seminar rooms where courses could be conducted and smaller spaces to conduct individual or private work.

**HOT DESK ZONES**
Within the breakaway spaces the C+EC should provide multiple hot desks. Hot desks are intimate spaces which allow one to conduct work or an informal meeting in a public setting. The hot desk requires electricity and internet connections.

**DINING**
The C+EC needs to accommodate an eating facility to service the delegates of the various events. The dining facility requires an industrial style kitchen, a canteen area, dining and lounging areas and a separate smaller café restaurant. The dining facility should be interconnected with the Recreation Park Clubhouse so that they can share facilities.

**THE EXHIBITION CENTRE**
The Exhibition Centre provides various types of experiential exhibition spaces. The Exhibition Centre is intended to host and curate exciting and engaging exhibits with the intention of attracting the public and in turn activity to the site. The Exhibition Centre functions as a social, cultural and recreational entertainment facility which is intended to supplement the Social + Recreation Centre.

**TEC PROGRAM**

**RECEPTION**
The Exhibition Centre needs to provide a welcome reception on entry. Admission is controlled via reception and so too is information, regarding the exhibition accessed. The reception area should in addition include a waiting area and lobby space.

**EXHIBITION SPACES**
A variety of flexible and multi-purpose exhibition spaces are required. It is important that the exhibition spaces can accommodate most types of exhibits. In addition, it is important that the visitor engage with the building as if it is part of an exhibit. Therefore a variety of types of emotive spaces need to be provided.

**THE SOCIAL EXCHANGE**
In contrast to the exhibition spaces, TEC needs to provide a space for informal socialising, where visitors can gather to interact socially and potentially discuss the exhibitions. This space should house a dining facility which contains within it a deli type restaurant, a kitchen, dining and lounging areas. Furthermore, the space should have a museum shop, where visitors could acquire memorabilia and information regarding an exhibit. It is again important that the social exchange area relate to and connect with the Recreation Park Clubhouse to encourage interaction of differing backgrounds and interests as well as make use of shared amenities and facilities.
INTRODUCTION

The feasibility and practicality of my thesis proposal is of utmost importance to me. One of the most important drivers upon initiation of the thesis was practicality with the ultimate goal of compiling something that could be constantly related to and potentially implemented in the real world. I have embraced and will continue to embrace practicality, viability and logic in everything that I do. Of course there will exist and I believe should exist conceptual and in some cases unrealistic elements in projects of this nature. Those elements which encourage one to push the boundaries and force one to think outside of the box. However the opportunity to achieve these optimistic proposals ultimately relies on one’s ability to make them viable.

I have thus compiled this chapter in an effort to illustrate to the reader as well as investigate and ensure for myself, the feasibility of my thesis proposal. I have suggested types of clients and consultants which I think are appropriate for this type of project and generated structures and companies which would need to be in place to insure the initiation and feasibility of the project.

Note:

1. Please note the clients and consultants mentioned and used in the feasibility are merely indicative of the kinds and types of clients and consultants one might utilise in a project of this nature and scale.

2. For the purposes of this exercise I will focus mainly on the feasibility model for the Social + Recreational Complex which is realised during phase one of the overall scheme. I will only include limited contextual information for the entire development and urban framework. However all future phases have been thought through and realised with the same practical approach applied to phase one and I believe it a matter of course to prove their viability.

3. As described previously the Social +
Recreational Complex is a kick-starter intervention for the reactivation proposal. The building’s catalytic nature requires it to be an iconic representation of the entire urban regeneration. Therefore a generous budget is allocated for the design. However such is this type of clients’ outlook that the project must yield returns. Therefore a careful balance between design, finishes, image and returns were considered and evaluated.

THE TYPE OF “CLIENT”
For the purposes of illustrating the viability of this project I refer to PropCo as the project client. PropCo is a fabricated company generated to help illustrate the type of company/client required for the feasibility of the project. PropCo would need to be a private developer/development driven company. PropCo would typically be a company comprised of private sector shareholders. An example of the private constituent could be a South African REIT (Real Estate Investment Trust) such as, Growthpoint Properties as well as a separate syndicate of shareholders. This syndicate could be comprised of companies of similar structure to that of Discovery Health, Liberty Life, Bidvest Bank and Standard Bank.

Note – For ease of communication and explanation I will refer to the companies mentioned above as if they are the parties involved in the project, however please note that they are purely indicative.

Growthpoint Properties is a registered South African REIT listed on the Johannesburg Stock Exchange. They have a very impressive and large portfolio of properties both locally and abroad. They are a liquid entity which are constantly expanding their portfolio. A development like my proposal is a typical project they would usually invest in and manage for greater exposure and financial gain.

Discovery Health, Liberty Life, Bidvest Bank and Standard Bank are all listed

FIG. 7.1. DIAGRAM INDICATING PROPCO’S STRUCTURE
Musiker Properties identifies an opportunity for a redevelopment of The Killarney Country Club.
Musiker Properties approaches a company similar to Investec Properties to form a Joint Venture to co-develop the project.

Note – For ease of communication and explanation I will refer to Investec Properties as if they are one of the parties involved in the project, however please note that they are purely indicative.

Musiker Properties and Investec Properties pitch their development idea and feasibility to Growthpoint Properties for investment and backing.
Growthpoint Properties acquire additional investors in the form of a syndicate of shareholders comprised of Discovery Health, Liberty Life, Bidvest Bank and Standard Bank.
Growthpoint Properties and the syndicate of shareholders form a Private Company (Pty) Ltd called PropCo.
Musiker Properties and Investec Properties develop the project on behalf of PropCo, consulting with PropCo’s Board of Directors.

LAND DEAL PROPOSAL
The site for my thesis, The Killarney Country Club is owned by The City of Johannesburg. It is in The City’s interests to support transformation on the currently underutilised and largely inaccessible site. I have therefore assumed that The City of Johannesburg would be willing to sign a long term lease over the land for fifty years. In return they would receive representation

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**FIG. 7.2. DIAGRAM OF PROPCO’S BOARD OF DIRECTORS STRUCTURE**

PROPCO’S BOARD OF DIRECTORS

**PROPCO’S BOARD OF DIRECTORS**

- **Growthpoint Properties**: 2 Members
- **Liberty Life**: 1 Member
- **Standard Bank**: 1 Member
- **Bidvest Bank**: 1 Member
- **The City of Johannesburg**: 1 Member
- **Discovery Health**: 1 Member

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98 • FEASIBILITY
in PropCo’s board of directors and 5% of PropCo’s yearly profit is deposited into a trust fund for The City and for social benefit. For the purposes of this document the trust fund will be named City Benefit Trust Fund.

THE CITY OF JOHANNESBURG’S INTERESTS

_ By being part of decisions made by the board of directors The City of Johannesburg effectively form part of the client.
_ The City of Johannesburg essentially setup a so called land bank by injecting land into the scheme rather than capital.
_ This is in The City of Johannesburg’s interests because the urban scale of the thesis intervention [as described in the Urban Framework chapter], will enrich and improve the city, they receive monthly income from the lease agreement and they receive 5% of PropCo’s yearly profit to reinvest back into the city. Not to mention the improved functionality and usage of their land.

OPERATIONAL AFTER COMPLETION OF PROJECT

PropCo’s board of directors together with the developers (Investec Properties and Musiker Properties) will form a subsidiary board of management which will be responsible for future operations, maintenance, administration and events.

FUNDING MECHANISMS

Funding for The Social + Recreational Complex is supplied by PropCo in the form of a loan from PropCo’s various equity stateholders. The loans are offset by project returns, of which some are generated through operating income from The Social + Recreation Complex’s facilities.

INVESTOR FUNDING

Note: Refer to Diagram on the Following Page.

_Growthpoint properties will supply 60% of the total capital outlay, in the form of a loan, for the project. In return they retain majority control over the company and can add The Social + Recreational Complex to their property portfolio to diversify its status.
_The syndicate of shareholders will supply 40% of the total capital outlay, in the form of

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**Fig. 7.3.** Diagram illustrating operation board structure

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Fig. 7.4. Diagram of Funding Structure

Fig. 7.5. Diagram of Organisational Structure
a loan. Each shareholder of the syndication, Discovery Health, Liberty Life, Bidvest Bank and Standard Bank, will each supply 25% of the syndicate’s contribution.

OPERATING INCOME
There are multiple income generating vehicles included in this proposal. Some of which include:

SOCIAL + RECREATION CENTRE
    _Advertisements and sponsors in the multi-purpose information centre and on the interactive display.
    _Commercial sponsorship of spaces.
    _Rental of the Pop-Up shops.
    _Rental of office space by Social + Recreation Johannesburg.
    _Hiring out of and membership to Social Club.
    _The sale of food and beverages in the bar and restaurant of the Club House and Social Club.

CONFERENCE + EVENTS CENTRE
    _Hiring out of conference centre spaces and amenities.
    _Catering for functions and events.
    _The sale of food and beverages in the dining area.

THE EXHIBITION CENTRE
    _Hiring of Exhibition Centre for exhibitions.
    _Entrance fee to Exhibition Centre.
    _The sale of food and beverages in the deli / restaurant.

FEASIBILITY CONCLUSION
In conclusion, I have tried to illustrate the feasibility of my proposal which I consider very plausible and attractive to Investors, The City of Johannesburg, The Killarney Country Club, Social + Recreation Johannesburg and the Public.
SPACE + FORM DEVELOPMENT
As discussed, in the Urban Framework chapter, I have decided to incorporate a public square at the heart of the regeneration process. The thinking was that a square generates interest and attracts people. It is also a very direct gesture to transform the site from private use to public use. The intention is that the square functions as a meeting, gathering and departing locus. A highly active node within Recreation Park, accessible to the public. It is intended to initiate regeneration over Killarney Country Club with support from the various interventions placed on and around the square as well as from the other proposed urban interventions.
INTRODUCTION

There are many successful and memorable public squares in the world. Many spaces hold opportunities for new public squares. Although imperative that public squares have the correct location, placement and function correctly it is not that easy to achieve. A square which is poorly conceived and designed will be uncomfortable and as a result not used - creating a dead zone which negatively impacts on its surrounding.

In my attempt to create a successful public square at the heart of the regenerative process I have researched the essence of successful squares. A successful square should be comfortable and memorable for the user. Great squares require utility, integrity, enclosure and delight.

UTILITY

“All great squares have served, and continue to serve, some useful purpose’ (Gatje 2010 Page 11).

INTEGRITY | ENCLOSURE

A square needs to have definition at its edges. Elements need to be the correct proportions, materials and forms to comfortably contain the space they are enclosing. (Gatje 2010).

DELIGHT

A square needs to be pleasing and enticing enough for people to want to be there. ‘It must look good and feel right.’ (Gatje 2010 Page 11). ‘No space can claim greatness without the presence of people’. (Gatje 2010 Page 11).

INTEGRAL ELEMENTS

Important elements for a successful square include image and identity, attractions and destinations, flexibility in design and use, have a seasonal strategy, have definition and active edge and possess ease of access. (Project for Public Space 2015)
PRINCIPLES FOR A QUALITY PUBLIC SQUARE

PLAN DIMENSIONS

• 30 - 150m

Smaller than 30m and the space is most likely not public. Greater than 150m and the architectural detail on the opposite end becomes unreadable.

PLAN PROPORTION

• Max 1:5

Beyond 1:5 and the square becomes a boulevard.

HEIGHT

• A ratio of 2:1, 3:1 and 4:1 are good height proportions for a square. (Gatje 2010).
• Eye level sight line of 25˚ from one side of the square to the top of the opposite side is good.

Most squares fail because the enclosing buildings are to low and not too high. Old European, pre elevator, squares were surrounded by 3/4 storey walk-ups resulting in ±15m tall buildings, which is a comfortable height (Gatje 2010). With one’s back to the wall, the top of the opposite facade should not be higher than 25˚, anything above 25˚ ‘contributes little to the enclosure of the square. (Gatje 2010).

FACADE

• Uniformity / Harmonious Complexity.
• Simple, Repetitive and Rhythmic.

‘Uniformity has been just as successful as harmonious complexity in rendering a square whole, but the latter is more difficult and more rewarding.’ (Gatje 2010 Page 14).
ROADWAYS

- Vehicles to the periphery, preferably to the outside of the square.
- Controlled slow traffic. (Gatje 2010).

SURFACE MATERIAL

- Patterned, Textured and Coloured.
- Grass

The surface material application and the design therefore play a vital role in the comfort, usability and functioning of a square. (Gatje 2010).

FURNITURE

- Fountains
- Sculpture
- Chairs
- Benches
- Cafes
- Music Stands

The application of the above ‘enhance the pleasure and usefulness of urban rooms’. (Gatje 2010 Page 15).

ARCADIES

- Covered Walkways

Covered walkways around a square enhance its usefulness and create thresholds between square and surrounding buildings. (Gatje 2010).
ARCHITECTURAL FEATURE

• Prominent Building

Successful squares often have a prominent building positioned in such a way that it is the first thing one sees upon entering the square. It becomes the anchor building and its function is to attract people and hold the square together. It is not a necessity in square design, but if implemented correctly can have monumental positive influence on the square and its surroundings.

NATURE

• Trees
• Water

Natural elements soften the space and create a sense of comfort, tranquillity and beauty. They become places for people to stop and take a moment to recognise the great space around them. Trees work well to cool a square in summer and allow warm sun to enter during winter (Gatje 2010).

OCCUPANTS

• PEDESTRIANS

‘The marvellous thing about squares is that the very reason they are made provide for their own success.’ (Gatje 2010 Page 15). Without people the square is worthless.
The thought process for the position of this pivotal and prominent feature within my intervention was scrupulously considered so that the square could be maximally effective.

The thought process was as follows:

- Placed close to the middle of the lengthy site, so that activity could start at the centre and radiate outwards over the site and thereafter to meet Killarney Mall to the South and Melrose Arch to the North before continuing further.
- Placement within the land parcel between the two major arterial roads being Glenhove Road and 11th Avenue. The reason for this is because both roads are very busy and the intervention would hopefully feed off their busyness as well as alleviate some of the congestion that both roads suffer with.
- Placed amidst the densification along 5th Street. So that the square can service the urban development.
- Placed close enough to have a relationship with the proposed High Street on 5th Street, Lower Houghton.
- Placed close to and potentially form a break in the Urban Promenade. So both elements can feed off one another.
- Insure that the placement has relationship with the proposed activities in Recreation Park, being the walking, running, cycling tracks, the golf course, recreation etc.
- Placed with exposure to the M1 Freeway to generate kerb appeal and interest from the freeway. Which would hopefully entice people off the freeway into the development.
- Placement considers access into recreation park, as I foresee the square being the main access point to Recreation Park.
1. THE SQUARE
The process starts with the placement of the square off of the High Street, amidst the proposed densification, intersecting the Urban Promenade and overlooking Recreation Park.

2. PERFORATE
The square is perforated at both ends to separate the square into a number of smaller buildings. In addition the Western building is raised off the ground. These perforations allow access to the square, promote freedom of movement into and through the square as well as provide views into the square and from the square into Recreation Park.

3. ANCHOR THE SQUARE
Anchor the square with a prominent building. This building will in turn become my design thesis architectural intervention, which together with the square will attempt to initiate the regeneration process of the Killarney Country Club.

I chose this building to develop and explore in detail over the other buildings in the square because:
_It interfaces with the square and Recreation Park.
_It becomes the threshold between urban development and nature.
_Upon accessing the square from the High Street it is the first structure you see and thus possesses great prominence.
_It has exposure to the M1 Freeway to the East, which can be used to attract the public.
4. **Shift + Stretch**

Shifted the anchor building Eastwards, opening up the square to allow the Urban Promenade to flow through the square as well as allow Recreation Park to seep into the square.

Stretched or elongated the anchor building to contain the square as well as achieve greater freeway exposure.

5. **Two Squares**

What remains after shifting and stretching is one large square which is effectively comprised of two smaller squares. These squares can serve different purposes and be treated differently, for example with different textures or surfaces. The Western portion becomes a more static square where the Eastern portion is more transitory and fast pace. However they can also function as one large square for larger events and big gatherings.

6. **Splayed**

Splaying the building attempts to integrate the building and the public square with their context and surroundings.

The splaying creates sight lines from the square into the natural Recreation Park, ensuring that the occupant of the square is aware of their location and surroundings.

In addition the splayed arms are designed to channel people from Recreation Park into the public square and vice versa.

Furthermore the splay begins to contain the open area to the East of the anchor building, creating a protected green public space potentially used as recreational parkland.
7. **FRACTURED**
Fracturing the building reduces the scale of the now large building. It divides the building into three elements and begins to give the different facets of the building individuality as well as frames sight lines to and from Recreation Park.

8. **DOUBLE SIDED**
The placement of the building affords it two front sides. Effectively becoming a building in the round. These sides can function differently in terms of zoning and formality. Where the Eastern side becomes slightly more formal and contained the Western side can become more informal and flow onto the space in front of it.

9. **SCULPTED**
Finally the three buildings are sculpted and shaped differently to create uniqueness and individuality. The sculpting starts forming three different gems in the landscape, a concept which I shall pursue further.
FIG. 8.25. DIAGRAMMATIC DRAWING OF THE PUBLIC SQUARE + OTHER ELEMENTS WHICH SUPPORT ITS FUNCTIONING
The anchor building of the square and in turn my design thesis intervention is realised as the Social + Recreation Complex. It is designed to be a catalytic and iconic building which initiates and aids the regeneration process of the Killarney Country Club. It, together with the public square is the starting point for the redevelopment from where growth, rejuvenation and activity can radiate outwards over the site and its urban context.

The Social + Recreation Complex is the face of the regeneration project. Together, the public square and the Social + Recreation Complex act as an activity node within Recreation Park, along the Urban
Promenade, the High Street and along the Sandspruit Spline. The intention is that they become a place of interest both within the proposed design interventions as well as in the surrounding urban context and city. They are designed to become the centre of attention, attracting and stimulating the public as well as generating and promoting activity on the site and into the surrounding context.

The building must foster, promote, develop and look after social and recreation activities and relationships both within the regeneration intervention on Killarney Country Club as well as within Johannesburg and its greater context. i.e. over Recreation Park, Sandspruit Spline, the Urban Promenade, the High Street, and Johannesburg.

The Social + Recreation Complex is made up of three interconnected but separate buildings. These three buildings are the Social + Recreation Centre, the Conference + Events Centre and The Exhibition Centre.
Fig. 9.6. SITE PLAN - SCALE 1-2500
SITE + DESIGN INFORMANTS

_SITE + DESIGN INFORMANTS_

_THE NATURAL STATE OF THE SITE_
_TOPOGRAPHY OF THE SITE_
_VIEWS OF THE SITE_
_THE PUBLIC SQUARE_
_THE URBAN PROMENADE_
_RECREATION PARK_
_THE SANDSPRUIT_
_THE M1 FREEWAY_
_NATURAL LIGHT_

FIG. 9.7. TOPOGRAPHY | LANDSCAPE DIAGRAM

SITE PLACEMENT

As mentioned the Social + Recreation Complex fulfils the role of anchor building to the public square. Its placement allows it to perform the function of a threshold between urbanity and nature.

The precise placement of the building in relation to the square and Recreation Park is very important. The building needs to be as much a part of Recreation Park as it is part of the square. It interfaces with the square as well as shifts to allowing the Urban Promenade to pass between itself and the square, whilst not shifting too far that the square becomes unconstrained.

Although the square sits between them, the Social + Recreation Complex has a connection to the high street. The S+R Complex features as a prominent building sitting on the square and is the first thing one sees when entering off the high street.

The building is close enough to the M1 freeway, which allows visual from the freeway, with the purpose of attracting people. However, the building is not too close that the freeway noise and movement interferes with the comfort of the building. In addition, it is topographically placed at a slightly higher level than the freeway, so the freeway looks up at the building and the building is able to look down over Recreation Park.

FIG. 9.8. PERSPECTIVE OF S+R COMPLEX FROM PUBIC SQUARE
The individual programs for each of the three buildings are different yet they are intended to support and sustain one another. The objective is that the three buildings create a symbiotic relationship with one another.

**SOCIAL + RECREATION CENTRE**
- Information & Welcome Centre
- Pop-Up Shops
- PlayPods
- Digital Labs
- Administration | Office Space
- The Social Club
- Recreation Park Clubhouse

**CONFERENCE + EVENTS CENTRE**
- Reception & Entrance Lobby
- Multi-purpose Conference & Function Room
- Auditorium
- Breakout Spaces
- Smaller Discussion Rooms
- Hot Desk Zones
- Dining

**THE EXHIBITION CENTRE**
- Reception
- Exhibition Spaces
- The Social Exchange

**DESIGN CONCEPTS**

**3 IN 1**
The concept for the Social + Recreation Complex was for it to appear as and address its surroundings as one building. However to be fragmented into three separated but inter-connected buildings with different yet related functions and programs.

**JEWELS IN THE LANDSCAPE**
Considering the building’s placement within Recreation Park’s natural setting as well as the immense size of the building, I thought it important that each of the three buildings express themselves differently for individuality, variety and association.

**SUSPENSION**
The public nature of the buildings’ programs require the ground floor to be flexible. Therefore the buildings use an exposed suspended structural system. In addition the structure becomes an expressed aesthetic and design element of the building. The concept of suspension is continually revisited and expressed in many other elements of the design.

**INSIDE OUTSIDE RELATIONSHIP**
The buildings should have varying levels of transparency, framing of views and connection to the outside, which constantly
showcases the natural surroundings to the occupant.

**USER INTERACTION**

Responding to the social nature and intent of the program of the building, it is imperative that the buildings have a high level of user interaction promoting social contact and interface.

**DOUBLE SIDED**

Such is the placement of the building that the building is required to have two equally prominent sides as opposed to the conventional building with a traditional back and front. This building has no back side and is such a building in the round, viewed and experienced from all sides.

**ACCESS**

All three buildings have three access points each. From the square, from the Recreation Park and from the below ground parking, situated underneath the public square. [These access points will be illustrated in the coming individual building sections].

Access to the underground parking below the public square is from 5th Street, Lower Houghton.
FORM

The form of the building is generated by its placement, site informants and function. A long linear building is proposed to maximally respond and interact with the public square on the one side and Recreation Park and the freeway on the other. These relationships are of such importance that even the ever-desirable North-South orientation was sidelined. The building therefore had to employ clever design strategies to access North and South light.

The general lozenge form is carried through all three buildings, binding them together to appear as one. The form of the building is enriched and expressed by the structure of the building and all three buildings share the same cleaned lined and honest design style.

However within the general form discipline, each building does adopt individualities in their form which set them apart from one another and become more specific to each building’s program, function and expression.

MATERIALITY

The Social and Recreation Complex attempts, as far as possible, to be true to its materiality. Expressing and exposing the materials to showcase their beauty as well as to articulate how the building has been assembled.

The three main materials utilised are:

- Exposed Concrete
- Steel
- Glass

FIG. 9.13. FORM OF S+R COMPLEX FROM NORTH EAST

FIG. 9.14. FORM OF S+R COMPLEX FROM NORTH WEST

FIG. 9.15. EXPOSED CONCRETE

FIG. 9.16. STEEL (2015)

FIG. 9.17. GLASS (2015)
STRUCTURE

The structure is an important element in the design of the Social + Recreation Complex. Where appropriate the structure is exposed to reveal to the user the way in which the building is being assembled and supported. In addition the structure serves as a form-making design element and major aesthetic contributor, throughout the three buildings.

The nature of the programs for the buildings require ground floor flexibility, and thus the structure of the buildings become a design concept and driver in an attempt to achieve this objective. I have decided to adopt a suspended structural system, using large concrete portal frames from which the building hangs. These allow for design flexibility within the frames as well as column free ground floors and atriums.

The building is suspended from the concrete portal frames using steel columns / cables. Concrete is much more efficient in compression and steel is much more efficient in tension. Therefore the application of the materials becomes directly related to their function and respects their individual properties. Furthermore, suspending the structure requires relatively small diameter cables / rods as supports. This greatly reduces the space for and the column size required if a conventional structural systems was utilised. i.e column, beam and slab structure.

The immense size and prominence of the portal frame structure requires that the portal frames not only function as the structure but also, as mentioned before, a form-making device, an aesthetic element, as a shading device and host to further shading and environmental control systems.
STRUCTURAL CASE STUDY

PROJECT • SAO PAULO MUSEUM OF ART
LOCATION • SAO PAULO, BRAZIL
ARCHITECT • LINA BO BARDI
DATE • 1968
PROGRAM • ART MUSEUM
MATERIALS • GLASS + CONCRETE

The Sao Paulo Museum of Art design by architect Lina Bo Bardi is a great example of a building which uses a suspended structural system with remarkable success.

A vital instruction in the brief was that the building must not block the surrounding vistas. Bo Bardi came up with an ingenious idea to split the building horizontally into two. (Langdon 2015). Allowing the building to fulfil its program, frame vistas and ‘return the same amount of public space as it borrowed.’ (Langdon 2015 Page 1)

Bo Bari achieved the design objective through her clever application of structure. She effectively used a portal frame structure to hang the top portion of the building. The building uses ‘two enormous pre-stressed concrete beams, resting on equally massive piers, which traverse the length of the site in parallel and suspend a voluminous box containing the museum’s main exhibition and administrative spaces.’ (Langdon 2015 Page 1). The building exposes its structure and exudes structural clarity which is further expressed by painting the structure red. As well as supporting the building the structure fashions the form of the building.

The building constantly explores the ‘dialogue between lightness and mass’ (Langdon 2015 Page 1) as well as juxtaposing International Style elements with Brutalism with great success.

The Sao Paulo Museum of Art is a fine expression and application of the structural system as the key component in the building design and one which performs multiple objectives.
GREEN | ENVIRONMENTAL DESIGN
All three buildings of the Social + Recreation Complex have been designed in an environmentally conscious manner. Some of the green design concepts utilised include;

SUN SHADING DEVICES
Vertical shading on the East and West facades, and horizontal shading on the North and South facade have been implemented to control light and sun light penetration into the buildings.

WATER TREATMENT
Greywater and blackwater from all three buildings and from the other buildings on the square are kept separate for different treatments.

GREYWATER TREATMENT
Greywater is collected in large tanks underground. The water goes through a series of purifying treatments. The clean water is stored and used in the buildings for taps and flushing toilets. The waste product/water from this process is used for irrigation of Recreation Park.

BLACKWATER TREATMENT
Blackwater is collected and moved though an underground natural filtration system. Attenuation ponds, situated to the East of S+R Complex, become a natural water feature and ecosystem overlooked by the S+R Complex. The cleansed water is then used as irrigation for Recreation Park. The waste product of this process is treated and turned into compost/fertiliser which is also used on Recreation Park.

RAIN WATER HARVESTING
Rain water is collected from roofs as well as the public square run off. This water bypasses the treatment for the blackwater and is moved to the attenuation ponds to the East of the building. From where it is also used to irrigate Recreation Park.

SOLAR POWER + HEATING
Solar panels are fitted above the S+R Complex, on roofs and in between the concrete portal frames. The energy harnessed from the sun is used to help power the S+R Complex as well as heat the hot water used in the building.

LOW ENERGY FITTINGS
All fittings, fixtures and equipment installed or used in the S+R Complex is strictly specified to be low energy.

MATERIALS

RECYCLED + NATURAL
Where possible the use of recycled and recyclable materials is encourage and utilised. Materials used have no off gassing. In addition, the materials are kept true to themselves and natural. No excess paint is used.

LOCALLY SOURCED
Where possible building materials are locally sourced. This is done to support local industry but also to reduce transportation, which has large negative impacts on our environment.

GLAZING
A combination of Low-E and Double glazed glazing is utilised to control internal conform levels.

NATURAL VENTILATION
All three buildings are naturally ventilated. Multiple fresh air changes take place hourly. This increases user health and productivity.

NATURAL LIGHTING
Natural lighting is maximised by tall glazing elements and light shelves. In the Social + Recreation Centre natural light is further increased by the large, shaded skylight and North-South glazed facades, which transfer natural, dappled light into the atrium and in turn the spaces connected to it.
Fig. 9.25. S+R Complex from North West

Fig. 9.26. S+R Complex from South East
FIG. 9.27. EASTERN PERSPECTIVE OF S+R COMPLEX FROM RECREATION PARK & FREEWAY
The Social + Recreation Centre is the middle building in the string of buildings which make up the Social + Recreation Complex. It is the main building of the regenerative trio. The buildings which holds all three buildings and the project together. It has the greatest exposure to the Public Square, Recreation Park and M1 freeway. It is designed to take advantage of the adjacent square and have a high level of interaction with square and Recreation Park. It contains the square but at the same time essentially becomes an indoor extension to the square. The two first levels are design to be maximally transparent and transitory, so that when one is in the square one can look right through the building into Recreation Park. In addition one is able to seamlessly flow from the square through the building and into Recreation Park on the other side.

The building is a six storey building, but because of the site’s level change it only has five stories to the square. Furthermore at the sixth level on the Park side the building has been pulled back to reduce its scale and appears as if it too has five stories. The building is public on the lower ground level, ground level and first level. Therefore after the building has controlled semi-private access for the floors above.

The building exposes its structure and is designed to appear as if the building is floating within its structure. From the North and South sides the building appears to be two suspended pods alongside one another with a large atrium in between and free-flowing and transitory spaces below.

The Social + Recreation Centre links to the Conference + Events Centre and The Exhibition Centre at lower ground floor and level two.
FIG. 9.30. 3D PERSPECTIVE OF THE SOCIAL + RECREATION CENTRE FROM THE SQUARE

FIG. 9.31. PUBLIC | PRIVATE DIAGRAM
**DESIGN CONCEPTS + INFORMANTS**

Note: The following design concepts + informants are in addition to the design concepts + informants mentioned in the prior section for the S+R Complex and are specific to the Social + Recreation Centre.

**ACCESS TO NORTH + SOUTH LIGHT**

The Social + Recreation Centre has an East West orientation. Therefore an innovative design approach was required to access North and South light. These include sandwiching an atrium, which extends the entire length of the building, between two suspended pods on the East and West. This allowed a large amount of North South light to enter into the atrium from both facades as well as from the roof. The pods and program inside the building look onto the atrium and have access to the light within it.

**INTERACTION WITH SURROUNDINGS**

Being the main building of the three, the S+RC has to have maximum interaction and interface with the Public Square, the Urban Promenade, Recreation Park and the Freeway. This has been achieved by placing the building centrally on the square and directly adjacent to the Urban Promenade. It is placed parallel to Recreation Park and the Freeway, possessing wide angles views to and from both Recreation Park and the Freeway.

**TRANSPARENCY + TRANSITION**

The Social + Recreation Centre is utilised to contain the public square, which in turn isolates the square from Recreation Park. Therefore the building required a great level of transparency through the it. This transparency allows views through the building to the natural surrounds as well as expresses natures importance and beauty.

**BUILDING PROGRAM**

- Information & Welcome Centre
- Pop-Up Shops
- PlayPods
- Digital Labs
- Administration | Office Space
- Social Club
- Recreation Park Clubhouse

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**FIG. 9.32. ACCESS TO NORTH + SOUTH LIGHT DIAGRAM**

**FIG. 9.33. TRANSPARENCY + TRANSITION DIAGRAM**
Fig. 9.34. Level 1 Floor Plan - Scale 1:200
**FORM**

The form of the building is essentially rectangular with a series of expressed portal framed ribs along its length from which the building suspended. The building appears top heavy, due to the suspension and transparency of the lower levels. In addition the upper levels cantilever out over the lower levels expressing this illusion. Furthermore the form is enriched by the sliding of the two suspending boxes passed one another creating a step in the rectangular form. The form is further enriched by vertically rectangular boxes on the East and West facades, which appear to float between the portal frames.

**ACCESS**

Main access is off the public square. A transparent and inviting access designed to make the interior of the building feel like an extension of the square. In addition one is also able to enter this level from the East side of the building through secondary entrances.

A second access option is on The Park side, on the lower ground level. One enters into the Recreation Park Clubhouse and can flow upwards into the rest of the building.

A third access alternative is to the backside of the Recreation Park Clubhouse, from the underground parking located below the public square.

Lastly access into the Recreation Park Clubhouse can be obtained from the Conference + Events Centre and The Exhibition Centre at either end of the building.
Fig. 9.38. Level 3 Floor Plan - Scale 1-200
Fig. 9.39. Level 0 Floor Plan - Scale 1-500

Fig. 9.40. Level 2 Floor Plan - Scale 1-500

Fig. 9.41. Level 5 Floor Plan - Scale 1-500

Key

Level 0 Floor Plan

1. Entrance
2. Pro Shop
3. Office
4. Open Plan Offices
5. Bar
6. Service + Storage
7. Lounge Area
8. Male/Female Change Rooms + Ablutions
9. Covered Terrace
10. Underground Parking

Level 2 Floor Plan

1. PlayPods
2. Digital Labs
3. Covered Terrace
4. Void

Level 5 Floor Plan

1. Social Club
2. Bar
3. Kitchen
4. Social/Lounge Areas
5. Roof Terrace
6. Ablutions
Circulation

Vertical

The main vertical circulation is located in the East side of the building to promote views over Recreation Park whilst circulating. Glass elevators and sculptural staircases express the circulation so one can see, from inside and outside, the movement of the users in the building.

Two additional vertical circulation routes are the fire escapes to the West of the building. The fire escapes are treated differently to the rest of the building. They are lightweight and expressed, constructed from steel with greenery up their lengths. They are utilised on the West side to block undesirable afternoon sunlight. The fire escapes are intended to be used as alternative vertical circulation between levels 3, 4 and 5.

Horizontal

On the lower levels’ circulation in pushed to the outside of the building to create awareness of the inside/outside relationship and afford views to the outside. On the upper levels circulation is internalised around the atrium to encourage user interaction as well as allowing the users on the lower levels to see other users on the upper levels, and vice versa. This enforces visual connections and relationships.
FIG. 9.46. SECTION AA _ SCALE 1:200

FIG. 9.47. SECTION BB _ SCALE 1:500
FIG. 9.48. NORTH ELEVATION _ SCALE 1-500

FIG. 9.49. SOUTH ELEVATION _ SCALE 1-500
FIG. 9.50. INTERIOR PERSPECTIVE FROM LEVEL 3, LOOKING INTO ATRIUM
FIG. 9.51. INTERIOR ATRIUM VIEW
FIG. 9.52. SOUTH EASTERN EXTERIOR PERSPECTIVE - FROM RECREATION PARK | FREEWAY
The Conference + Events Centre is the South building of the Social + Recreation Complex. Its entrance has exposure to, and interfaces with the public square. The rest of the building sits within and looks out onto Recreation Park. In addition, it interfaces with the Urban Promenade which runs past it. The buildings siting and orientation are as such to take advantage of the views through Recreation Park as well as to channel people from Recreation Park into the public Square. Furthermore, it frames views to Recreation Park from the public square, making people aware of their surroundings and enticing people into the Park. In addition, it also allows the building to get as much North-South light as is possible whilst satisfying the above criteria. The building supports the Social + Recreational Centre, functioning as a social, commercial and entertainment facility.

The Conference + Events Centre is a four storey building but appears as three storeys from the square because of the step in the site. It is a semi-public facility which offers both publicly accessible zones as well as private areas for hiring purposes.

The building is a combination of very large, flexible open spaces and small intimate areas. The building encourages multi-use and flexible facilities as well as interaction between its users.

The Conference + Events Centre links to the Social + Recreation Centre at lower ground floor and level two.
Fig. 9.55. East view of Conference + Events Centre from Recreation Park

Fig. 9.56. Fractal - Multi-use/Flexible Space
**DESIGN CONCEPTS + INFORMANTS**

Note: The following design concepts + informants are in addition to the design concepts + informants mentioned in the first section, for the S+R Complex and are specific to the Conference + Events Centre.

**UNIQUE FORM | GLOWING GEM**

The Conference + Events Centre and in turn the Social + Recreation Complex are terminated at the South with a glowing gem, which is the suspended auditorium. The form, generated by the function of the auditorium, makes a unique shaped building. The use of solids and voids express the fact that the space is hanging. Intricate detail to the facade creates a space that one can see out of during the day, but one is unable see in from the exterior. However at night this changes as the detailed facade is illuminated from the inside to reveal a glowing gem in the landscape. One is then able to see activity taking place within the gem, represented as silhouettes.

**MULTI-PURPOSE | MULTI-FUNCTION**

Such is the nature of a conference and events venue that flexibility is of utmost importance. The spaces within the building attempt to have more than one function. For example the staircase doubles as an informal amphitheatre or auditorium space. Large rooms have the ability to segment to create spaces with a variety of sizing and shape options to suit the user and functions’ requirements.

**BUILDING PROGRAM**

- Reception & Entrance Lobby
- Multi-purpose Conference & Function Room
- Auditorium
- Breakout Spaces
- Smaller Discussion rooms
- Hot Desk Zones
- Dining

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**Fig. 9.57. UNIQUE FORM OF THE SCULPTED, SUSPENDED & GLOWING AUDITORIUM**

**Fig. 9.58. MULTI-PURPOSE STAIRCASE - FUNCTIONS AS A PLACE OF INTERACTION & AN INFORMAL AMPHITHEATRE**
Fig. 9.59. Level 1 Floor Plan - Scale 1-500

KEY

1. Covered Entrance + Breakout Space
2. Reception
3. Lobby + Breakout Space
4. Ablutions
5. Staircase/Amphitheatre
6. Covered Terrace
7. Multi-Purpose Conference + Function Room
8. Storeroom
9. Service | Prep Room
10. Bar
11. Public Square
12. S+RC

FIG. 9.59. LEVEL 1 FLOOR PLAN - SCALE 1-500
FORM

The form of the building is primarily created to function as a channel to the public square and a viewing device to Recreation Park from the square.

The entrance court is a large undercover area, created by a void in the form. The level above the entrance quart allows the form of the building to create a continuation between the Social + Recreation Centre, before the form of the C+EC splays to the East.

In addition the form of the building truly abides by the concept of form follows function. In so doing, it expresses the interior voids and spaces as forms to the exterior. Therefore from the exterior one is able to have some knowledge of what the interior function is. Spaces which showcase this are the multi-purpose conference and function room as well as the auditorium.

The entire building continues the theme of suspended structures, utilising the intentionally repetitive portal frame. However the auditorium takes this idea one step further, with the use of solid and void, to really emphasise the hanging nature of the auditorium.

ACCESS

Main access to the building is off the public square and into a large triple volume lobby.

A second access into the building is off the lower level, into the dining area, from where one is able to move vertically to the conference and event spaces.

A third access point is from the backside of the Social + Recreation Complex, from the underground parking located below the public square.
Fig. 9.63. Level 3 Floor Plan - Scale 1:500

Fig. 9.64. Level 0 Floor Plan - Scale 1:1000

Fig. 9.65. Level 2 Floor Plan - Scale 1:1000

**Key**

1. Auditorium
2. Breakout Space + Hot Desk Zone
3. Outdoor Breakout Space
4. Conference Room
5. Ablutions
6. Kitchen
7. Flexible Conference Space
8. Void
9. Outdoor Terrace + Link to S+RC
**CIRCULATION**

**VERTICAL**

Vertical circulation is expressed with a central multi-use sculptural staircase in the large volume lobby. Glass elevators are placed on the South of the building, allowing maximum North light by not obscuring the northern facade. In addition the elevators allow views out of the building and into the building, whilst moving up and down.

Additional vertical circulation routes are the fire escapes and service lift to the South-East of the building. Further vertical circulation includes the fire escapes out of the auditorium as well as the external staircases between level two and three’s external breakaway spaces. The external staircases and fire escapes are expressed and lightweight.

**HORIZONTAL**

On the lower levels circulation is pushed to the periphery of the building to make circulating experiential with a view. In addition people from the outside can see activity in the building. The upper levels have circulation around the lobby atrium, affording interaction between users across different levels. In addition this allows the primary functional spaces to be pushed to the outside of the building, affording them light, exposure and views.
FIG. 9.72. EXTERIOR PERSPECTIVE - ENTRANCE VIEW
FIG. 9.73. INTERIOR PERSPECTIVE - ENTRANCE ATRIUM
FIG. 9.74. EXTERIOR PERSPECTIVE - SOUTH VIEW FROM URBAN PROMENADE

154 • BUILDING DESIGN
THE EXHIBITION CENTRE

OVERVIEW

The Exhibition Centre is the North building of the Social + Recreation Complex. Its entrance has exposure to and interfaces with the public square, the rest of the building extends out into Recreation Park. Like the Conference + Events Centre the Exhibition Centre interfaces with the Urban Promenade which runs passed it. The buildings siting and orientation are as such to take advantage of the views through Recreation Park as well as to channel people from Recreation Park into the public square and along the Social + Recreation Complex’s lower ground level arcade. Furthermore it frames views to Recreation Park from the public square, making people aware of their surroundings and enticing people into the Park. The building supports the Social + Recreational Centre, functioning as a social, cultural, educational and entertainment facility.

The Exhibition Centre is a four storey building but appears as three storeys from the square because of the step in the site. It is a public facility which accommodates a variety of types of exhibitions, from art to science to sport to interactive education and many others.

The building is primarily a combination of varying sized, open plan and flexible spaces. The building is designed to be a journey through exciting and unexpected spaces. A combination of transparent, enclosed, voluminous and compressed spaces, which juxtapose one another and force the user to acknowledge the architecture and their surroundings.

The Exhibition Centre links to the Social + Recreation Centre at lower ground floor and level two.
FIG. 9.77. EXTERIOR PERSPECTIVE - WEST VIEW OF TEC FROM THE PUBLIC SQUARE

FIG. 9.78. DIAGRAM ILLUSTRATING A BUILDING IN THE ROUND
Design Concepts + Informants
Note: The following design concepts + informants are in addition to the design concepts + informants mentioned in the first section, for the S+R Complex and are specific to the The Exhibition Centre.

Sculptural
Such is the program and type of The Exhibition Centre that it allows the architecture to be very expressive and free. In turn this building becomes sculptural in its appearance, form and positioning. Making the building unique, interactive and iconic.

Cube within a Cube
Continuing with and reinforcing the sculptural nature of this building, The Exhibition Centre’s form expresses a cube within a cube. A transparent and light weight ground floor showcase a suspended solid cube within the building’s nucleus. This suspended cube functions as a focal point upon entry into the building, as well as generates mystery and intrigue as to the contents and space encased within the suspended solid cube. Furthermore the light weight ground floor and floating cube reinforces the common theme of suspension which is utilised throughout the Social + Recreation Complex design.

Transparency + Enclosure
The Exhibition Centre plays with the idea of transparency and enclosure. As one moves through the building there are a sudden changes between being able to see through the building into its surroundings and being enclosed in spaces that have intentionally little relation to the outside. This concept is intended to make the journey through the building exciting and is used as a method to focus the users attention on certain elements.

Building in the Round
The placement and size of the building dictate that the building be viewed from all angles. Therefore it is designed not have a prominent back, front or sides. All elevations are equally exciting. Furthermore, on level one, the building has a covered walkway around its entire perimeter, which emphasises this concept. One is able to circulate the exterior of the building from any direction of approach.

Building Program
- Reception & Entrance Lobby
- Small, Medium and Large Flexible Exhibition Spaces
- Breakout Spaces
- Deli | Restaurant
- Museum | Exhibition Shop

Fig. 9.79. Floating Cube within a Cube
Fig. 9.80. Transparency + Enclosure Diagram
Fig. 9.81. Level 1 Floor Plan - Scale 1:500

**KEY**

1. Covered Entrance + Breakout Space
2. Reception
3. Entrance Lobby
4. Flexible Exhibition Space
5. Covered Walkway
6. Void
7. Public Square
8. S+RC
Sharing the same intention as the The Conference + Events Centre the form of The Exhibition Centre building is primarily created to function as a channel to the public square and a viewing device to Recreation Park from the square.

The entrance court is a large undercover area, created by a void in its form. The level above the entrance quart allows the form of the building to create a continuation of the Social + Recreation Centre before the form splays to the East.

The entire building continues the theme of suspended structures utilising the intentionally repetitive portal frame. Within the portal frames the form of the building is playful and expressive. The building meets the ground very lightly yet this is contrasted by suspended heavy elements within the building, creating the illusion of a cube within a cube or space within space.

The form ends in a sharp point to the north, accentuating its secondary function as a channelling device but more-so gives the building a unique shape and a prominent face to the freeway and Recreation Park. This is further highlighted by its intricate facade and shading treatment.

**ACCESS**

Main access to the building off the public square and into a double volume entrance lobby, which is dominated by the floating cube as a focal point.

A second access into the building is off the lower levels’ covered walkway into the deli/restaurant and museum shop, from where one is able to move vertically to the exhibition spaces.

A third access point is from the backside of the Social + Recreation Complex, from the underground parking located below the public square.
KEY
1. Exhibition Space
2. Flexible + Multi-Purpose Exhibition Space
3. Outdoor Terrace + Link to S+RC

**Fig. 9.85. Level 3 Floor Plan - Scale 1-500**

**Fig. 9.86. Level 0 Floor Plan - Scale 1-1000**

**Fig. 9.87. Level 2 Floor Plan - Scale 1-1000**
CIRCULATION

VERTICAL

A generous staircase and a glass elevator in the entrance lobby move occupants between ground level and lower ground level. Vertical circulation from ground level to level two and three is pushed to the far end of the building, away from the entrance lobby, forcing the user on a journey through the building. The straight run staircase and glass elevator, flank the glazed Eastern facade providing views through the intricate shading into Recreation Park.

A sculptural and lightweight fire escape clips onto and is expressed on the North West of the building. The fire escape is not hidden but rather transformed into a design element.

HORIZONTAL

Circulation is a key element in the experience if this building. One is forced on a journey through the building. On ground level the user circulates through the exhibition space towards the vertical circulation. Circulation on level two is internalised and concealed, forcing the user in a circular motion through the exhibit and back to the vertical circulation. The third level does the same but before descending to the start one is pushed around the periphery of the building, again in a circular motion, making circulating experiential with a view.
Fig. 9.92. Section FF, Scale 1:200

Fig. 9.93. Section HH, Scale 1:500
FIG. 9.94. EXTERIOR PERSPECTIVE - SOUTH EASTERN FACADE AND ENTRANCE QUART
FIG. 9.95. INTERIOR ENTRY VIEW
FIG. 9.96. EXTERIOR PERSPECTIVE - EASTERN VIEW FROM RECREATION PARK | FREEWAY
FIG. 9.97. S+R COMPLEX WEST ELEVATION - NTS

FIG. 9.98. S+R COMPLEX EAST ELEVATION - NTS
FIG. 9.99. PERSPECTIVE OF THE S+R COMPLEX FROM PUBIC SQUARE
SIZE MODERATOR
Thank you to my family and friends for your constant support throughout the entire duration of my studies.

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To the ‘Blue Room’, you guys are true friends. Having a studio with such conscious and thoughtful people made this year all the more interesting and enjoyable.
Angles, M. 2010, In Favour of Public Space - Ten Years of the European Prize for Urban Public Space, Centre de Cultura Contemporania de Barcelona and ACTAR, Barcelona, Spain.

Bava, H., Hoessler, M. & Philippe, O. 2009, Territories - From Landscape to the City, Birkhauser Verlag AG, Germany.

De Jong, J.K. 2014, New SubUrbanism, Routledge, United Kingdom.

Dehaene, M. & De Cauter, L. (eds) 2008, Heterotopia and the City - Public space in a post-civil society, Routledge, United Kingdom.


Field Operations and Diller Scofidio + Renfro 2008, Designing The High Line - Gansevoort Street to 30th Street, Finlay Printing, United States of America.

Foucault, M. 1984, "Des Espace Autres" - Of Other Spaces: Utopias and Heterotopias, Full, .


Mostafavi, M. & D., Gareth 2010, Ecological Urbanism, Lars Muller Publishers, Zurich, Switzerland.


**JOURNALS | ARTICLES**


van Wyk, A. 2014, Chemical dumping makes Sandspruit river bubble, Sandton Chronicle, Johannesburg, South Africa.

**ELECTRONIC**


References


ILLUSTRATIONS

3. SITE + CONTEXT

Figure 3.1. Killarney Country Club Logo (2015).

Figure 3.2. Johannesburg Locality Map - Indicating the Killarney Country Club, Computer generated map after Google Maps, Musiker, R (2015).

Figure 3.3. Africa, Computer generated map, Musiker, R (2015).

Figure 3.4. South Africa, Computer generated map, Musiker, R (2015).

Figure 3.5. Gauteng, Computer generated map, Musiker, R (2015).

Figure 3.6. Johannesburg, Computer generated map, Musiker, R (2015).

Figure 3.7. Site Locality Map, Computer generated map after Google Maps, Musiker, R (2015).

Figure 3.8. A Game of Bowls (1952) The Transvaal Automobile Club 1952, The Transvaal Automobile Club, 1st edn, Grocott and Tapp (Proprietary) Limited, Johannesburg.

Figure 3.9. Swimming Pool & Children's Pool (1952) The Transvaal Automobile Club 1952, The Transvaal Automobile Club, 1st edn, Grocott and Tapp (Proprietary) Limited, Johannesburg.

Figure 3.10. 18th Green & Clubhouse (1952) The Transvaal Automobile Club 1952, The Transvaal Automobile Club, 1st edn, Grocott and Tapp (Proprietary) Limited, Johannesburg.

Figure 3.11. Before Relocation, Cooke's Farm (1968) The TAC Magazine 1968, The TAC


Figure 3.13. Stifling Element Diagram, Computer Generated, Musiker, R (2015).


Figure 3.15. Musiker, R. Bowling Green Facilities (2015), Digital Photograph.

Figure 3.16. Musiker, R. Tennis Courts (2015), Digital Photograph.

Figure 3.17. Musiker, R. Sandspruit Flowing Through The Site (2015), Digital Photograph.

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ANCHOR BUILDING
The main building and in turn attraction in an area or cluster of buildings. It has prominence and stature, which is used to establish and or sustain an area or space. It has the ability to function in isolation but is often utilised to support the buildings and spaces around it.

BLACKWATER
Blackwater is the term used to describe wastewater from a flushed toilet or sewage.

ERVEN
Plural of Erf, describing a plot of land, usually urban, marked off for building purposes.

FIELD
The term used to describe the tee-times on a golf course.

GREYWATER
Greywater is the term used to describe wastewater generated from washing foods, clothes, dishware, hands and from bathing.

HALFWAY HOUSE
Halfway house is the name given to the clubhouse or in some cases smaller venues on a golf course which are used by the players after nine holes of golf have been completed. The Halfway house is where you would stop for a quick break, some food and drink before continuing with the second nine holes.

LAND RECYCLE
Land Recycle is the term used for reinventing underutilised or misused land. It often refers to transforming a piece of underutilised land into a more appropriate and useful land parcel.

LIQUID ENTITY
A term used in financial circles which refers to a company, stock or individual which/who is successful and has a large positive bank balance.

TRIGGER EVENT
An occurrence which activates interest, investment and improvement in an area.