



## PROBLEM STATEMENT

The city of Pretoria gets over three million visitors per year, which is to everyone's benefit and creates lots of opportunities for business. Contradicting some people's assumptions the business turnover in the city centre of Pretoria is round about R42 milliard per year. This dissertation is about developing a new luxurious five star hotel on the remaining portion of Sammy Marks Shopping Centre in the city centre of Pretoria, on the corner of Church Street and Prinsloo Street, which will fully capitalize on these statistics.

From the diagram on the right, it can clearly be seen that there is a shortfall of hotels in the immediate Inner City. There is only 2 four star hotels in this vicinity, with the rest averaging between two and three stars. Visitors and businessmen travel long distances when visiting the Inner City of Pretoria, as far as Johannesburg and Sandton, just because of their luxurious accommodations. Pretoria has to start competing with these kind of accommodations especially with the eye on the soccer world cup in 2010. With the rapid rail on the way, which runs from Johannesburg International Airport through the Inner City of Pretoria, this is a both a possibility as well as a necessity. There is also a great opportunity to combine the hotel with nearby hospitals to fully capitalize on the tourists coming to South Africa for affordable medical operations; using the hotel as a base during their recovery period, as the nearby hospitals are of highest international standards.

Facilities such as the Reserve Bank, State Theatre and the Department of Trade and Industry as well as all the attractions in the surrounding area is also in need of luxurious accommodation and facilities to help them functioning to their full potential.

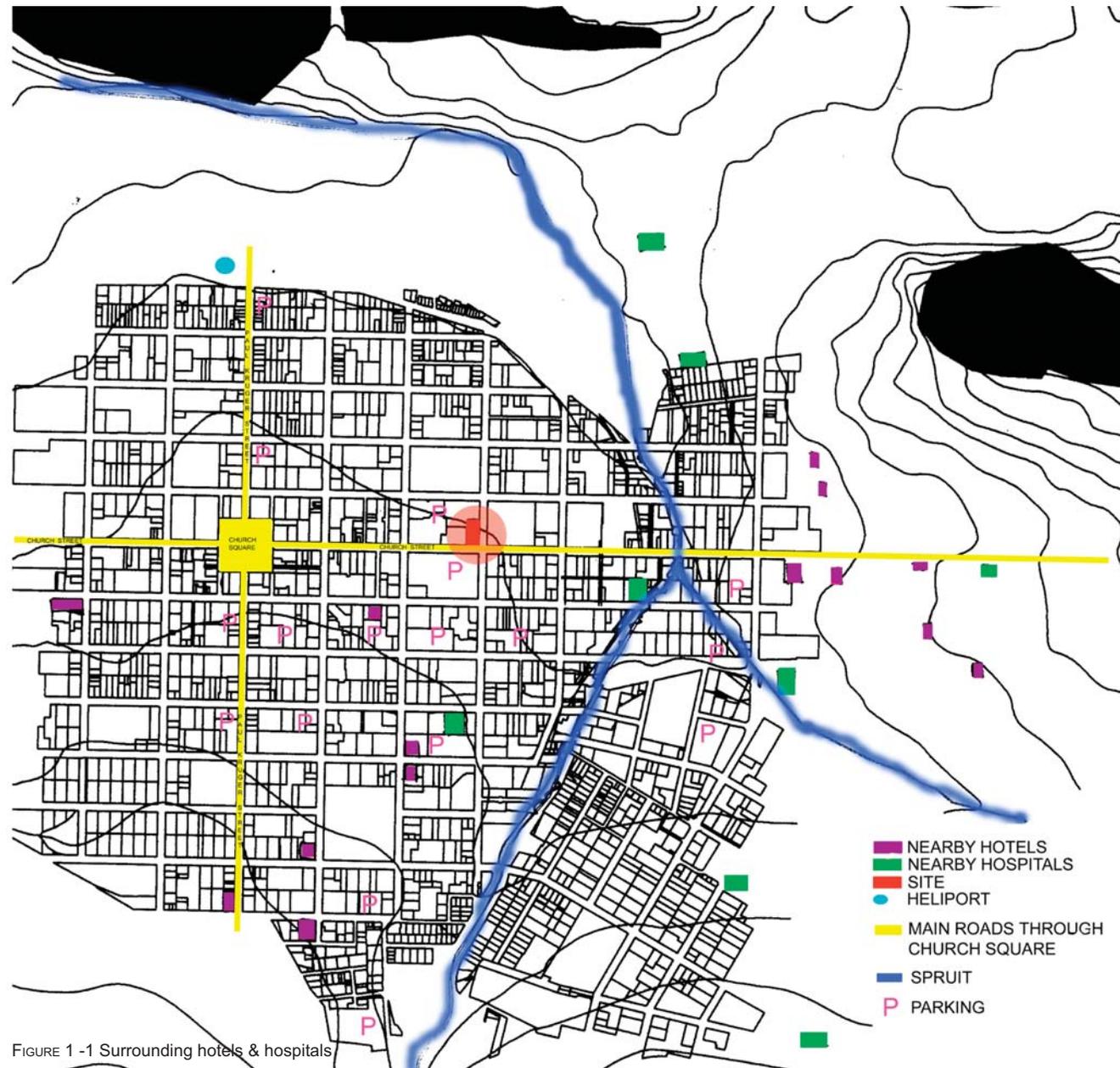


FIGURE 1 -1 Surrounding hotels & hospitals

## SITE LOCATION

The site for the hotel development was identified in the Inner City of Pretoria on the remaining portion of Sammy Marks Shopping Centre on the corner of Church and Prinsloo Street. This site has the ability to inject new meaning into the CBD and to unleash the vast potential and opportunities that lies within the city. The site has the further potential to create an enriching, sustainable and convenient environment that provides unlimited opportunities and choices to its inhabitants. There is a lot of activity and movement through the site that is under-utilized and in dire need for development that will create a new energy point on one of the four axes leading out from Church Square. This in turn will further create a spark towards Church Square and strengthen an important activity spine.

Two areas of study was identified namely the project area and the study area. The project area includes the area around Church Square, Minutoria, ABSA tower, Reserve Bank and the State Theatre. The study area will focus in on the immediate site and will include Sammy Marks Shopping Centre, which takes up the rest of the city block the chosen site is situated on.

### PROJECT AREA



Figure 1 -3

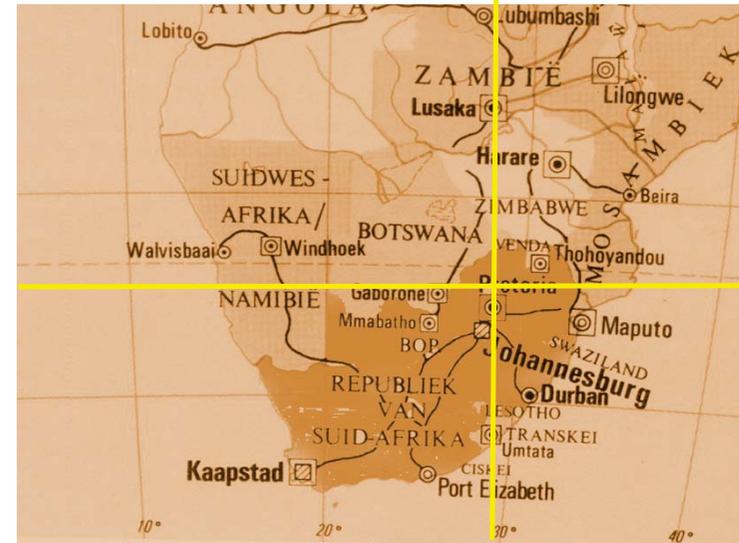


Figure 1 -2

### STUDY AREA



Figure 1 -4

## APPROACH

The city is a source of security for its citizens. As an environment orientated solely towards the human experience, it acts as a symbolic alternative to dangers of the wilderness, a place where people gather to give each other security through their collective strength. Similar to the city no other natural spectacle can compare with the brilliant colours, constant movement and complex textures of a coral reef. This rich pageant of life has been acted out in the same shimmering sunlit waters for many millions of years. In the over crowded tumult of life on the coral reef, living in close proximity with others is inevitable. Some animals have taken the close association one step further, evolving relationships with members of a quite different species. Although such teamwork is usually to mutual benefit of both parties, the parties are not actively or intentionally “cooperating”- it is a system that runs on instinct and selective advantages, not intelligence or idealism. Cooperation lies at the heart of life in the coral reef. The reef itself is the product of a remarkable partnership between the tiny, immobile coral polyp in its chalky casing and microscopic plant known as a zooxanthella. The plant provides the essential materials, including mineral nutrients; the plant keeps the polyp well fed. These in turn, provide a refuge for numerous other species of plants and animals in one of the most colourful and beautiful carnivals of marine life. To truly understand the rock solid, organic fantasia that is a coral reef, we may need to assemble the most sophisticated knowledge, technology, and theorems. Then again, maybe we will step back with a nod and say: This is what life on earth does, given warm waters, sunlight and time. Maybe cities aren't so different from reefs at all? Before making pronouncements about the health of any reef or city- you have to know its age and where it stands in recovery from the most recent disturbance. We need to get away from the notion that reefs and cities everywhere at all times should look like the perfect undersea garden or utopian city in a travel brochure. “A central pre- condition for the achievement of high- performance urban environments is to compact the form of the city: to ensure that it develops, over a period of time, into a system that works well at a pedestrian scale. It is essential in order to maximize the generative capacity of urban systems. The more compact the local market, the greater the range of potential economic opportunities that present themselves to all inhabitants. In more compact systems the levels of social and commercial service are much higher and convenience and equity of access to them is much greater.” (Dewar, Uytendogaardt). Pretoria has much more to offer than the ubiquitous historical remnants of political dramas. Being the administrative capital of South Africa had a huge effect on academic, industry, trade, sport and other fields. In the field of science and technology the city contributes significantly to South Africa's development. Tshwane's strength in the fields of human science and scientific and industrial research, technology, medicine, education, manufacturing and training provides a strong base for future developments.

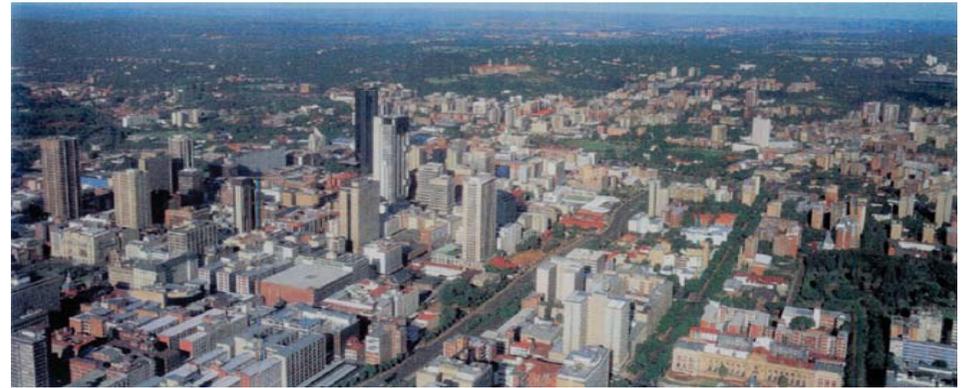


FIGURE 1 -5 City of Pretoria



FIGURE 1 -6 Coral Reef

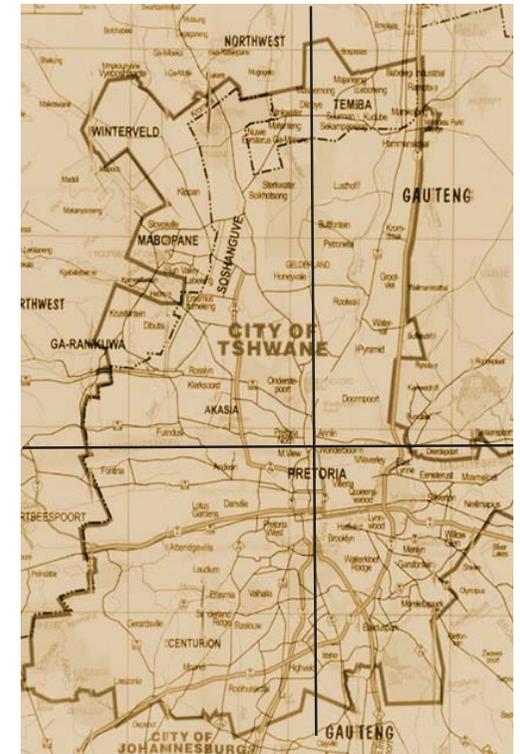


FIGURE 1 -7 City of Tshwane

# TOURISM AND LEISURE

“The fashion for travel was well established by the end of the 18th century. It received new impetus and new direction from the early 19th century interest in nature and scenic beauty. But it was the railroad and the money middle classes, thrown up by the commercial and industrial revolutions, which produced the modern hotel. The word “hotel” was adapted, first in France and later in England about the end of the 18th century, to signify a departure from the customary method of housing guests, to something more luxurious and ostentatious. The hotel offered everything that the fastidious visitor could desire; it constituted the transition from the old to the new.

“Modern hotels are of three, more or less distinct types- the commercial hotel, the resort hotel, and the residential hotel. The commercial hotel, which this thesis is more about, caters for the transient commercial guest. The travelling sales man was for a long time, its most important patron. The hotel industry, from its very nature is closely connected with the public in general. It is interesting to note, that this branch of business and its financial possibilities constitute blank in the field of general knowledge in a large proportion of the public. The hotel industries in South Africa, unlike in many other countries, struggles against many retarding influences, but at the same time there is no doubt as time have shown, that the hotel constitutes a good investment of capital.” (Axelrod. A. 1940)

This thesis is about a five star hotel with a strong wellness component and the basic condition and the essential elements for life of full health and optimal wellness must be clarified. The WHO (World Health Organization) health definition provides the first hints. “The basic condition must be a “complete physical, mental and social well being”, and a wellness lifestyle has to concentrate at least on these elements. Fitness is thus one element for physical well being on the way toward a high level of wellness; however, other elements such as good nutrition, beauty, relaxation, mental activity, social harmony, and environmental sensitivity must be added. The whole potential of human history in regional and global cultures should be used to achieve this goal.” (Weiermair, Mathies, 2004)

BIOLOGICAL AND GENETIC FACTORS 24%	IAFROGENE (MEDICAL) FACTORS 16%
ENVIRONMENTAL FACTORS 12%	INDIVIDUAL LIFESTYLE 48%

This figure summarizes the elements required for such a comprehensive understanding of wellness and provides a basis for further development of wellness concept.

## 4 PILLARS OF WELLNESS

(WELLNESSHOTELS@BELVITA.IT)

### RELAX



### BEAUTY



### FITNESS



### VITALE CUISINE



“Wellness represents a new global approach to health and stimulates a more leisure-based health concept as well as the development of a new health-orientated leisure system. Wellness hotels and health tourism started this process; gyms, saunas, fun pools, and wellness centres followed and are still following. Traditional health resorts such as spas and hospitals fell into a crisis and therefore need to modernize their concepts. The wellness approach initiated a process of globalisation and modernization of the leisure and health resorts, spas, and tourism destinations. As previously mentioned a big part of the hotel in this dissertation will be a recovery centre for tourist that come to South Africa because of affordable medical operations. In the capital many hospitals will have the opportunity to align themselves with the hotel to fully capitalize on this trend. This may just be the opportunity hospitals waited for to modernize their concepts.

The American physician Halbert Dunn developed the wellness concept in 1959. This can be seen as a way to implement the new, broader WHO (World Health Organization) health definition. Health is now seen as a dynamic process, whose goal can be specified as “high-level wellness”. Wellness is best described as a way of life. It is a lifestyle that you, as an individual, create to achieve your highest potential for well-being. Your lifestyle consists of actions you are able to control, such as how you exercise, eat, manage stress, and perceive the environment. Achieving a high level of wellness involves continual striving for a more healthful way of living. The world has become a global village with global leisure-based health systems. Basic knowledge for a long life based on high-level wellness now is at worldwide disposal. Throughout the history of developed global cultures, (medical) treatments have

Fig. 1-8 Reasons for premature death (Weiermair, Mathies, 2004)

## TOURISM IN TSHWANE

been (theoretically) available. The network of health resorts offers all known treatments and wellness elements. High-level wellness could become available for all human beings. A new global social health and wellness policy must be defined. Health and wellness for all should be guaranteed.

Reality is a moving target. That leisure and its use, which historically is defined and redefined by technological innovations and changes in the economy and in the processes of work, may undergo a series of continuing rapid transformations. Perhaps the most important transformation is that customisation of leisure experience will mirror the customisation and diversification of work and daily life. For many post-modern lives will render distinctions between work and leisure almost meaningless. For others often living in close proximity, culture, religion, and ethnicity will define leisure and its appropriate use. The customisation of leisure will mirror the customisation of reality.” (Weiermair, Mathies, 2004)

With three million visitors per year the stimulation of the tourist industry is a priority to the Tshwane municipality. In the State of the City Address on 17 Feb. 2004 the executive Mayor of Tshwane, stated that: “the promotion of tourism is a key focus area of our Marketing Department for the forthcoming financial year”. New projects geared towards increasing Tshwane’s appeal to tourists include:

Freedom Park that is the flagship National Heritage project and will become an important tourist attraction and public place. Located at Salvokop at the Southern end of Paul Kruger Street.

The gautrain that is part of the Blue IQ initiatives and will run through Freedom Park with a stop near Pretoria Station. This public transport system will make the CBD much more accessible and connect Pretoria with major airports.

South Africa will host the 2010 Soccer World Cup. The tournament will be sure to boost the South African economy. An estimated three million fans will visit South Africa during the tournament, far more than the number of supporters who came for the Cricket World Cup in 2003 or the Rugby World Cup in 1995. Tshwane will also receive a piece of the pie in the form of the brand new Rainbow Junction Sport Station in the North of Pretoria.



Figure 1 -9 Link between Jhb International Airport & Pretoria

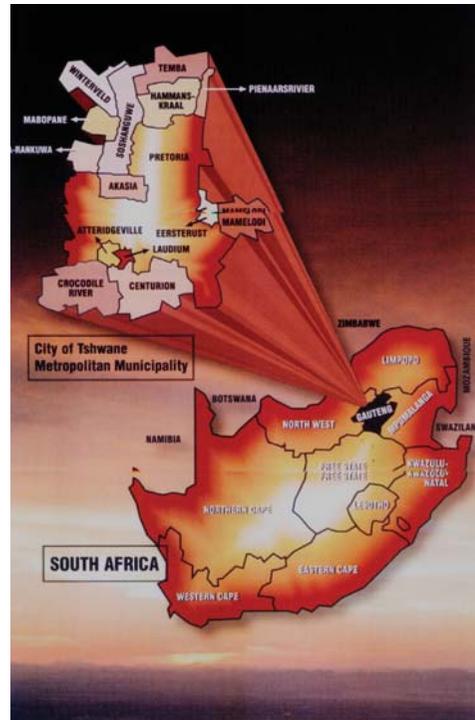


Figure 1 -10 City of Tshwane



Figure 1 -11 Gautrain



Figure 1 -12

**All the above clearly portray the importance of tourism to the South African community. The upgrade of the Inner City and the creation of more luxurious accommodation is a realistic and important consideration. The CBD should be made more attractive to tourists.**

# A DESIGN PHILOSOPHY

## INTRODUCTION

These days the art of design is moving very fast indeed, so fast that there is a sort of “intellectual gap” already formed. We constantly get the feeling that designers don’t really grasp what they are doing during a certain design process when giving form to something and becomes more and more like a piece of art work. It is as if there is some sort of disorder going on in design trying to create order. Design at the end of the day strives to create order. It is almost like walking through a library searching for a good book, or searching the Internet for trust worthy information. How do you know that what your are getting isn’t a lot of junk, that is again based on previous junk and so on? In a world of design we need some sort of vehicle to travel through this broad space filled with designs. Striving to move in a more structured way into the future and doing so moving past and eliminating all the junk surrounding us. It is as if the right design already exists, we should just find the right way (vehicle) to get to it. The end product (form) of design and the process itself is more and more like monsters. We can’t get our arms around it to get it under control and so this monster grows bigger and bigger each day and eliminating our reference points. Part of this problem is that we are designing in more and more complex contexts. As a single designer, we can’t grasp all the interactions or features on a specific context as self- continues designers.

## EVOLUTION OF FORMS

Architects tend to copy a lot from one another. We often see the same details of a particular building or house been repeated on new designs, some times on a small scale and some times on a large scale. Can it be that artefacts surrounding us today are using us, in this case as designers, to reproduce itself to survive? Changes take place faster than we can understand it, and we don’t know any more what is reliable knowledge and what is not. The world of the architect is created in an architect’s mind according to certain principles related to the biology of the brain. According to one theory of the thinking process, an idea arises out of the competition among similar and dissimilar ideas occurring simultaneously in adjacent neural circuits of the brain. The same principles of competition and selection might be said to apply to the general public in accepting architecture. “Things in the built environment originate and endure (not just in the tectonic sense, but in their survival value in a society’s common language) because they “make sense” in some way. Competing ideas in a society eventually suppress or reinforce each other to produce one or more dominant themes. In other words, creativity and survival work in ways that are compatible with the cognitive machineries that make up the mind.

Nevertheless, sometimes the mind works against the body by acting in a harmful manner. An architect’s mind has the power to either create designs that adapt to human needs and emotions, or to impose arbitrary images on the environment. A Darwinian selection process in architecture takes place among competing ideas in the mind. A second process, also Darwinian, occurs in the society of consumers. This second selection process is between styles, where certain styles win over others. In both of these selection processes (i.e., in the mind, and in society), the criteria are a mixture of human needs and irrelevant stylistic fashions. Meme propagation and encapsulation explain why these two disparate sets of selection criteria can coexist, and when one set can displace the other. The architect’s mind is impacted by the problem space and various “memes” (conceptual entities that propagate among human minds) from a variety of sources. These could come from one’s own memory; visual templates from the environment; the influence of other architects; etc. Competing forces such as engineering constraints, a desire for creativity, and the unique need to express oneself drive the design to its final state. A Darwinian process in the mind of the designer depends on a set of selection criteria. Specific architectural styles, however, replace the selection criteria of traditional adaptive design by a matching to visual templates, or “memes”. Once adaptive design is abandoned, the spread of architectural styles depends strictly on factors governing meme propagation in a society. A minimalist style then possesses an unbeatable advantage over more complex styles, because of its low information content. Each design competes in the mind of the designer with other conceived possibilities, and the fittest ones (those that partially solve the problem as posed) survive to the next generation. More detailed designs generate further alternatives, which are culled by selection in the subsequent round. The cycle starts with the creation of variants, which then get culled by using a set of selection criteria; the survivors are used to create a new generation of variants, which get culled in turn; and so on. This represents a typical Darwinian process. Visual inspiration can fix the entire gestalt of a project in a single initial image. Often, it is precisely such a conceived image that, through the emotional feedback it generates in the mind of the architect, sustains the design and drives it towards completion. When architects turn for inspiration to fixed images from a set vocabulary defining a style, images displace the adaptive component of design by changing the selection criteria. Design then becomes a process of comparison with

certain visual stereotypes, which radically affects the end product. Matching to currently popular images takes priority over all the other design constraints. The new selection criteria may not aim at adapting a design to human needs. The selection process itself ceases to be recursive because selection occurs only on the first level, which is derivative of memory and stored images. If structural, functional, and practical constraints are abandoned in the interest of maintaining images, however, such a design method acquires advantages of economy over more complex approaches that are adaptive. Copying an image is very easy to do, and gives a superficial sense of understanding while ignoring the complexities of both the copied structure, and the needs of what is being designed. Grain silos were the end-result of adaptive design for agricultural storage, not for habitations. Copying the “look” of a structure developed for something ELSE, AND APPLYING IT TO A USE FOR WHICH IT WAS NEVER INTENDED, IS NOT ADAPTIVE. “ (NIKOS. A. SALINGAROS)

### RECURSION

“Nesting and variations of nesting, this concept is very general, stories inside stories, movies inside movies, Russian dolls inside Russian dolls. Sometimes recursion seems to brush paradox very closely. For example, there are recursive definitions. Such definition may give the casual viewer the impression that something is being defined in terms of itself. That would be circular and lead to infinite regress, if not to paradox proper. Actually, a recursive definition (when properly formulated) never defines something in terms of itself, but always in terms of simpler versions of itself. Sets can also be recursively enumerable, which means that it can be generated from a set of starting points (axioms), by the repeated application of rules inference. Thus, the set grows and grows, each new element being compounded somehow out of previous elements. But this is the essence of recursion –something being defined in terms of simpler versions of itself, instead of explicitly. Recursive enumeration is a process in which new things emerge from old things by fixed rules. There seems to be many surprises in such processes. It might seem that recursively defined sequences of that type possess some sort of inherently increasing complexity of behaviour, so that the further you go, the less predictable they get. This kind of thought carried a little further out you go suggests that suitably complicated recursive systems might be strong enough to break out of any predetermined pattern. And isn't this one of the defining properties of intelligence.” (D.R. Hofstadter). Christopher Alexander is also leaning towards a recursive approach

in searching for form instead of a more popular present day self-referential approach. Our values, like the arms of a scale, weigh and determine our decisions, including those entailed in design. This value system is formed over years, shaped by the many lessons and experiences of life including our intellectual inquiries. When we attempt to infuse these conscious stimuli into a work of architecture it is very easy to handle them in a self-conscious manner. Acting in conscious of them, we may inadvertently focus on their agenda, and not on its influence on our value system. The idea simply generates architecture. The architecture becomes a means of representing that idea which generated it. It is self-referential. According to Christopher Alexander, constructive diagrams can describe the context, and it can describe the form. It offers us a way of probing the context, and a way of searching for form. Because it manages to do both simultaneously, it offers us a bridge between requirements and form, and therefore is a most important tool in the process of design. In all design tasks the designer has to translate sets of requirements into diagrams, which captures their physical implications. In a literal sense these diagrams are no more than stages on the way to specification of form, like the circulation diagram of a building, or the expected population density map for some region under development. They specify only gross pattern aspects of the form. But part from these diagrams to the final design is a matter of local detail. The form's basic organization precedes its design. The intention (or the physical meaning) of a known problem may be captured by a diagram; and by the same token the intension of any new, hitherto unconnected, set of requirements may be captured by a new diagram. To look at the illustration Alexander gives us (fig. 1) we can see the one on the left that the tree of sets is obtained by successive divisions and partitions. In A diagrams is derived out of the context by a certain designer (different diagrams will form for different designers), and depending on what and how much they know about specific things that is applicable to the context they are working in, they will start side-stepping their way through problems that appear along the way. By doing so the designer draw up diagrams from out the context, and choose certain diagrams above others according to he's/her preference to more familiar information. Sub dividing complicated diagrams into smaller, more understandable diagrams, and choosing your way through them according to your knowledge (eliminating some along the way), will give you diagrams to base form on, but it will not reflect the true form necessary for the specific context. In B Alexander suggest that we should start of with the smallest dia-

grams (understandable) and work our way back to the larger diagrams to arrive at form. The smaller the diagrams and problems the less emotions is involved and the more open it becomes to criticism and improvement. All the diagrams in the latter case are derived at statements about potential misfits and the interactions of these misfit variations. We are looking for some kind of harmony between two intangible ideas: a form that we have not yet designed, and a context that we cannot properly describe. The only reason we have for thinking that there must be some kind of fit to be achieved between them is that we can detect incongruities, or negative instances of it. The incongruities in an ensemble are the primary data of experience. If we divide an ensemble into form and context, the fit between them may be regarded as an orderly condition of the ensemble, subject to disturbance in various ways, each one a potential misfit. The task of design is not to create form that meets certain conditions, but to create such an order in the ensemble that all the misfits are eliminated.

Fig. B is almost like the dog and bone situation. Imagine there is a dog and a human friend has just thrown a bone over a wire fence into another yard. He can see the bone through the fence, just lying there in the grass. There is an opening in the fence about fifty yards from the bone. What do the dog do? Some dogs will just run up to the fence, stand next to it, and bark; others will dash up to the opening and double back to the lovely bone. The barking dog sees the sub problem as (1) running to the fence, (2) getting through it, and (3) running to the bone. The other dog sees the sub problem as (1) getting to the opening of the fence, (2) going through it, and (3) running to the bone. Notice how everything depends on the

way you represent the “problem space” –that is, on what you perceive as reducing the problem (forward motion towards the overall goal) and what you perceived as magnifying the problem (backwards motion away from the goal).

“In some sense all problems are abstract versions of the dog –and –bone problem. Many problems are not in a physical space but in some sort of conceptual space. When you realize that direct motion towards the goal in that space runs you in some sort of abstract “fence”, you can do one of two things: (1) try moving away from the goal in some sort of random way, hoping that you may come upon a hidden “opening” through which you can pass and then reach the goal; or (2) try to find a new space in which you can represent the problem, and in which there is no abstract fence separating you from the goal.” (D.R. Hofstadter p.611)

In diagram B you can also do a backwards motion away from the goal in trying to get to the goal where as in diagram A you don't have enough information to fall back and try a different way to get to the goal.

But we still need that vehicle to explore and move successfully through the design space and therefore Christopher Alexander introduces 15 structural preserving transformations to be used in this broad design space.

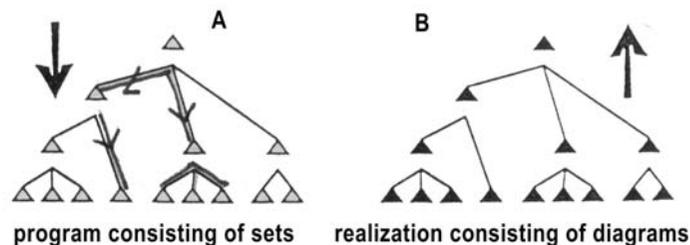


Figure 1 -13 Recursion & Nesting (Alexander)

## 15 STRUCTURAL PRESERVING TRANSFORMATIONS

These structures are what we got. How do we adapt in the future? Structures will try to minimize the risk of not preserving things we know about design. Minimize the risk that we design something that we are better off without. We are living in a very uncertain and complicated time where things are adapting and evolving. Things like style in a sense, is not part of this 15 structural preserving transformations and will only confuse use with what is reliably knowledge and what is not. This dissertation will attempt to see how the following 15 structural preserving transformations can help the design and to analyse the existing context.

LEVELS OF SCALE	CONTRAST	
STRONG CENTRES	GRADED VARIATION	
ALTERNATING REPETITION	ROUGHNESS	
BOUNDARIES	ECHOES	
POSITIVE SPACE	THE VOID	
GOOD SHAPE	SIMPLICITY AND INNER CALM	
LOCAL SYMMETRIES	NOT-SEPARATENESS	
DEEP INTERLOCK AND AMBIGUITY		(ALEXANDER.C, 1994)

## CONCLUSION

Designers must find a way to work with complicated contexts where there are so many layers containing different information on a specific site, that it become so difficult to know with what information to work with and what to ignore. We must try to break these contexts up into smaller more understandable diagrams and try not to define something in terms of itself. With these diagrams we have the chance to go back if we get stuck and take different paths to get to a solution. Instead of trying to solve problems all at once and jumping to quickly to solutions, we must break things up into smaller pieces. The chances are the smaller and less complicated we think, the greater effect we will have with our designs.

With hotels and other developments of this scale one can very quickly get lost in all the information needed to compile the building and this can lead the designer to become more and more self-referential instead of following a recursive path in search of the appropriate form.