

Reflectance of Change within Space and the State of Human Sensation through Adaptive Re-Use of Old Spaces

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Submitted to the
Institute of Graduate Studies and Research
in partial fulfilment of the requirements for the Degree of

Master of Science
in
Interior Architecture

Eastern Mediterranean University
September 2012
Gazimağusa, North Cyprus

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ABSTRACT

Human sensations could be experienced within any type of space, whether it is old or contemporary. Change within spaces could initiate a major impact on a psychological scale of sensual response and perception of the space. Change could come in a variety of forms such as renovation/ adaptive reuse, conservation, re-functioning, remodelling, restoration. It is of importance to consider that change could harbour in a diversity of aspects regarding the physical elements of change and the emotional aspects of change. Therefore the adaptation or renovation of old spaces to a new context should be sensitively considered, within the possible outcomes that affect the experiential senses and emotions that are bound to the space prior to the renewal.

This research aims to combine a synthesis of research and contribute to the knowledge of space & place, the human sensations and the aspects of physical and emotional change within the renovation/ adaptive reuse of old spaces. The issues that could occur within this type of research are that it is a subjective field, for the reason that it is intangible, immeasurable; every person has their own preference and perspective in the sense of values to space, this limits the research into focusing more on the scientific facts and grounded theories on the matter. The research focuses on the aspects that could affect the human sensations within the process of change. The data that forms the background knowledge of the subjects are derived from literature and grounded theory that is the main source that supports the discussions and arguments within the thesis.

This study emphasises the sensitivity that needs to be considered within the idea that change brings major implications both physically and emotionally. The study aims to shed light on issues that could occur during the renovation or adaptive reuse of a space and signifies the important responsibilities of an interior designer. This thesis could serve an interior designer or researcher as a reference for further studies. In addition they could utilize the information present within the thesis as an ingredient within their approach to projects that aim to change a space from old to new in the sensual perspective.

Keywords: Human sensations, interior design, renovation, adaptive reuse, space, perception.

ÖZ

İnsan duyuları, eski veya çağdaş her tür mekanda farklı deneyimlenebilir. Mekandaki değişim duysal etkileşim ve mekan algısının psikolojik ölçeği üzerinde büyük bir etki yaratabilir. Değişimi; yenileme, yeniden işlevlendirme, adaptasyon ve restorasyon gibi çeşitli biçimlerde gözlemlemek mümkündür. Konunun vurgulanması gereken en önemli yönü mekandaki değişiklikliğin içerisinde bir çeşitlilik barındırmasıdır.. Olası sonuçlar dahilinde bu deneyimlenen duyular ve duygular doğrudan mekanla ilişkili olarak değişir ve etkilenir. Bu nedenle, yenileme öncesinde, eski mekanların yeni çevreye adaptasyon ve yenileme projeleri yapılırken doğrudan mekanla ilişkili olarak değişen ve etkilenen olası durumlar bağlamında çok hassas olunmalıdır.

Yapılan bu araştırma, bir araştırma sentezi oluşturarak; mekan & yer kavramı ve eski mekanlardaki yenileme ve yeniden işlevlendirme projeleriyle gerçekleşen, mekandaki fiziksel olguların değişmesi ve mekan duygusuna bağlı insan duyularındaki değişimi araştırarak bu konulara katkıda bulunmayı amaçlar.

Öznel bir alanda yapılan bu tip bir çalışmada karşılaşılabilecek zorluklardan biri alanın soyut olmasından dolayı ölçülmez olmasıdır. Başka bir deyişle, her insanın kendine özgü tercihlere sahip olmasıdır. Mekanı algılayışının ve bakış açısının farklı olması gibi nedenlerden dolayı, bu çalışma, limitler çerçevesinde daha çok bilimsel açılara yoğunlaşmak ve temel teorilere dayanarak yapılmak durumunda kalmıştır.

Araştırma deęişim sürecinde insan duyularını etkileyen faktörler üzerinde yoğunlaşmaktadır. Bu araştırma içerisindeki konuyla ilişkili tüm bilgiler; tartışmalar ve argümanların ana kaynağı olan temel teorik bilgiden ve literatürden oluşmaktadır.

Bu çalışma; deęişimin, fiziksel ve duygusal etkileri çerçevesinde dikkate alınması gereken duyarlılığı vurgular ve yenileme ve yeniden işlevlendirme sürecinde bir iç mimarın sahip olduğu sorumluluklara ışık tutmayı hedeflemektedir. Bu tezin ileride yapılacak çalışmalar ve araştırmalarda iç mimar veya araştırmacılara ışık tutması beklenmektedir. Bununla kalmayıp, duygu perspektifinde ele alınması, eski mekanları yeni mekanlara dönüştürmeęi amaçlayan yenileme projelerinin yaklaşımlarında da kullanılabilir bir kaynak görevi de görecektir.

Anahtar kelimeler: İnsan duyuları, iç mekan tasarımı, yenileme, yeniden işlev kazandırma, mekan, algı.

ACKNOWLEDGEMENTS

Appreciation is expressed to:

...my family & my sister for her overwhelming support

...my fiancé to be

...my friends which endured my personal stress but still supported me along the way

Lastly my greatest appreciation is expressed to my supervisor Asst. Prof. Dr. A. Banu Çavuşoğlu, for her unbelievable trust and encouragement, in addition to her incredible positive spirit which guided me throughout the whole process of this research...

Dedicated to my family & my loved ones...

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Chapter 1

INTRODUCTION

1.1 Problem Statement

Human sensations could be experienced within any type of space, whether it is old or contemporary; change within spaces could initiate a major impact on a psychological scale of sensual response and perception of the space (Tuan, 2001).

Change could come in a variety of forms such as renovation/ adaptive reuse, conservation, re-functioning, remodelling, restoration. With the depletion of space for new buildings within major cities, renovation and adaptive reuse of space is a necessity rather than a luxury (Ravetz, 2008). It is of importance to consider that change could harbour in a diversity of aspects regarding the physical elements of change and the emotional aspects of change. Therefore the adaptation or renovation of old spaces to a new context should be sensitively considered, within the possible outcomes that affect the experiential senses and emotions that are bound to the space prior to the renewal (Douglas, 2006).

Old environmental spaces often outlive their original intention. The concepts know as restoration, renovation and adaptive re-use is a process in which these old spaces are brought back to life, not always keeping their original functions, the only factors that affect these concepts within the design processes are the physical and emotional

values that are attached to these environmental spaces and the social identity it holds within its context ("Historic preservation" 2012).

Modifications to the physical environments can come in many forms, shapes, dimensions, materials, textures, objects, colour, lighting effects. all of these factors hold a certain importance when considering the human psychological response to these changes, the responses could be both physical and emotional (day, 2002).

The renovation or reuse of old spaces is the transformation of old values, culture, attachments (physical or emotional). The processes are to sustain an environment for future use, such as renewal or the adaptation of new functions to old or new spaces. The Renovation and adaptive reuse of environments is in need of a general understanding of the characteristics and identification of the existing space. this is due to the reason that the spaces could have different values according to its context. This subsequently allows for the spaces to be properly designed and adapted to its new context, without harming the values, characteristics or the personal attachments to the designed spaces.

Personal attachment to spaces becomes an issue, due to reasons that humans naturally territories space for their own habitable needs and wants. Territorialism can be defined as a personal space, where every element of the space belongs to the individual (Lewin, 1951). When territorialism takes place the space is then personalized which could add personal values to a space, naturally developing the emotional and physical bonds to a certain space.

By developing personal and emotional bonds with a space this allows the space to transform and become a place for a human. If psychological bonds are present to a human concerning a space and the space is then renovated or changed, this may also have an impact on a physical or psychological level. Therefore extra care and consideration is needed when renovating or adapting an old space which could have certain attachment values to human beings.

The renovation of an old space into a new modern function could create problems if it does not consider human sensations within, values and the personal attachments to spaces. Factors such as these, needs to be considered in the renovation or reuse of environments within a mind set of preserving the environment but also preserving the characteristics and values that are significant to the original sense. The main issues regarding renovation entail how the values, characteristics and attachments of a space are transferred into its new function, or if they are ignored during the renovation process creating new values and characteristics.

The main goal of the study is to emphasize, the significance of considering human sensations within a renovation or an adaptive reuse design process.

1.2 Aims and objectives of the study

The main aim of the thesis is to combine a synthesis of research and contribute to the knowledge of space and the human senses. The thesis will try to identify how physical change through time; via renovation or adaptive reuse could also have a parallel effect on the human sensations. The most significant factors that could create the physical and emotional responses will be researched.

Renovation and adaptive reuse will serve as a ground for discussions on the changes within spaces the two subjects will not be examined in detail but their importance under the light of this study will be expressed.

Through literature and examples, the study will try to comprise and document the sensual dimensions of physical space. Extracting the main aspects that affect the human sensations within a place. This could serve as an ingredient to an architect/interior architect during the process of a renovation/adaptive reuse of environments, with a sensual approach to the matter.

1.3 Methodology

The method used within this study is a qualitative research method. the scientific and theoretical background for the thesis is formed by open literature. The thesis will form a documentary type research, where a variety of views, opinions and theories and examples that will be discussed. This will provide for the formation of the body of the scientific facts and theories within the subject matter.

The important factors, such as the human sensations and change within environments, will be discussed on the basis of the scientific knowledge and theory.

The physical changes through time and the emotional impacts that are of result within the outcome of the transformation (due to conversion of space) will be discussed and argued upon.

visual examples of both renovations and reused environments will be analyzed to support the overall discussions based on human sensation and the impacts of the transformation of spaces. The documentative type research that is derived from literature will allow the basis for the arguments and conclusion supported by visual examples. The different views, opinions and suggestions will be discussed to clarify the most significant aspects that affect the human sensations within the conversion of an environment.

Table 1.1: Outlook of the thesis

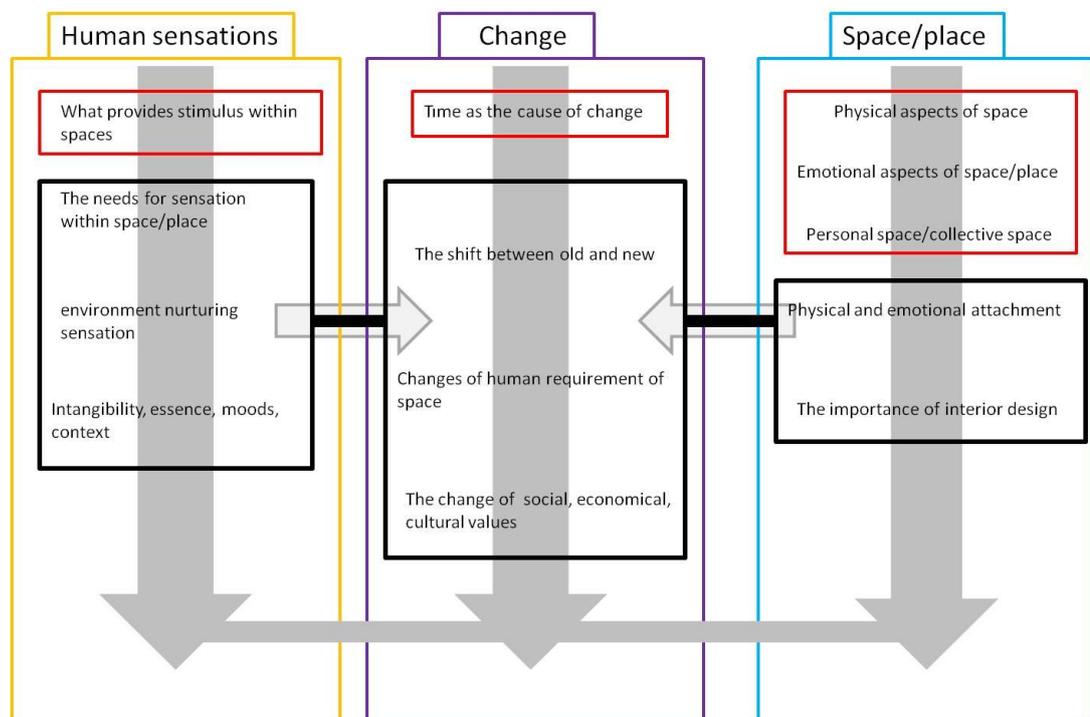


Table 1.1 was the starting point for this study in the relation of the subjects, this provided The necessary steps into forming the holistic body of the thesis. the grey

arrows pointing down show how each subject was systematically research from start to end and how these three bodies tried to be related to each other in the most appropriate way possible

The physical and emotional aspects of space will be examined in detail within chapter two. consisting of theoretical and scientific knowledge through literature such as the physical facts inherited within the defenition of physical space in relation to formal elements, the composition of space, and the meaning of space to humans. furthermore the emotional facts inherited within space will be examined consisting of Personilization of space, the sense of place and the formation of place. later in chapter two sensations and the way humans sense within spaces will be examined on both a theoretical and scientific level.

The importance of interior design and the notions of change such as adaptive reuse and renovation will be discussed within chapter three in relation and reference to chapter two . in chapter three the ground for the discussions and arguement will be through the mind set of change and the human sensations, using fields such as renovation and adaptive reuse as a filter to determine the possiible outcomes change can imply on the human sensation. the discussions and arguements within chapter three will form the conclusion refering to topics examined in both chapter two and three.

1.4 Limitations

Human sensations and perceptions of environments is an intangible field of research, due to the facts that they are comprised of personal preference. Every human has their own perception, feelings, moods towards the environment, therefore making it

a very subjective field. however there are scientific facts about how humans experience sensual feelings or develop personal attachments and values to certain environments.

The elimination of personal preference or opinion based judgment was a vital issue, due to the reasons that it could not be evaluated with any significant proof. The thesis is therefore based more around the scientific facts and theories that suggest the possible outcomes/responses of human sensation and perception related subjects. the research for the thesis does not make use of a case study model, since having case studies will allow for subjective conclusions that have no real contribution to the research. however the thesis will be comprised of suitable examples to support the discussions made.

The use of renovation and adaptive reuse was implemented to limit the field of research. The main reason behind this decision is that renovation or adaptive reuse brings about a certain change to an environment, the transformation from old to new could both effect the environment physically and emotionally. by focusing on the aspects that effect human sensations and perception. renovation and adaptive reuse will not be explained in detail as to their specifics, however their importance within this study will be brought to light, within the framework of 'change' and the effects on the human sensations.

Chapter 2

INVESTIGATING SPACE

The investigation of space is, significantly crucial as to understanding the basic knowledge of design and the individual perspectives with perceptions on the manifestation of space, with any manufactured space the character and the identity of a place is achieved. The investigation of space will provide a deeper understanding and underlining the factors within how space is created and modified. This knowledge will compliment and serve as a support for the assessment of the human sensations within space. The physical and emotional factors within spaces and their overall effects on human sensations will be theoretically brought to light within this chapter.

2.1 What is the physical definition of space?

Space is defined by three dimensional forms of objects; it is referred to as everything and anything a human can perceive within his/her environment, whether it be a vase on a corner table to a tree outside, space surrounds its environment. Within scientific terms, space has no boundaries; it is how objects are arranged within a relative space, positioned in different directions. In modern day physics, space is perceived as four dimensional, this is infused by the idea that time has a factor in space itself making it a four dimensional field, with the change of time we can observe a space and the evolution the space conducts within its environment. Space is a field in which we interact, perceive and sense (Zelenski & Fisher, 1995).

Space surrounds our living environment it creates the field in which we walk, breath, observe and taste. It is a fundamental element of life; we simultaneously make use of this field to manufacture our own procreation of space, resulting in the creation of the foundation that we perceive as our living environments (Tuan, 2001).

After understanding the basic knowledge of space, the physical factors of space must be examined to have clarification and distinguish the physical space from the emotional space; every type of space has a physical composition of forms such as, objects, texture, colour, and lighting, material. These physical factors of space, determine the physical shape of a space, their used to create boundaries and limitations to any given space (Rigdon , 2007).

Lefabre (1991) also developed theories on social spaces, Lefabre (1991) theory is based on what he refers to as the spatial triad, this triad is the space as physical, mental, social, and identifies them with the three moments which are the perceptual, which refers to spatial practice, the conceivable, which is related to representations of space and the lived, which is what he calls representational space. The spatial practice of a society is this society's space which it produces slowly, the physical space, the perceived space. Representation of space is the conceptualized space, which is conceived by scientists, architects, planners, urbanists, technocratic subdividers and social engineers. This is the dominant space in any society. Finally the representational space is the space as lived and experienced through its associated images and symbols. This space overlays physical space making symbolic use of its objects (Lefabre,1991).

2.1.1 Physical facts inherited within the definition of space in relation to formal elements

The physical environment is in constant interaction with every living organism, and is affected by the alterations of all living organisms. However the human interaction between the physical environments is the more dominant force: Our technological advancements allowed us to modify the physical space to suite our needs of shelter, our personal and collective activities or for providing services, materials for our operations. The human intervention with the physical environment has had massive implications and has transformed the globe; the technological essence of this transformation has to be accepted to remain human (Thiel, 1980).

2.1.1.1 Composition elements of built man-made environments: Spaces

Modifications to the physical environments can come in many forms, shapes, dimensions, materials, textures, objects, colour, lighting effects. These factors of the physical space are going to be observed in the manner of how these formal elements can define a space; these elements will be evaluated in sense of what their presence is within space and what types of effects they bring to a space (Day, 2002).

Within Christopher day's book *spirit & place* (2002) where he talks about how environments could be physically shaped through manmade elements or natural forces that are already present within the environment. Therefore analyzing the physical properties in both the natural environment and the integration of manmade structures in the sense of their basic compositional factors will be examined.

Hillier & Hanson (1984) created the space syntax theory; Space syntax is a theory that incorporates space and the human behavior, utilizing tools and methods for the analysis of human interaction within the built environment, it also examines the impact of accessibility in spatial layouts on behavior, communication and interaction.

Space syntax and relative studies/ methods is important in the field of universal design, the concept known as accessibility is significant in the understanding and the analysis of human behaviours in the sense of the impact of built spaces and urban spaces. Space syntax analysis provides the theoretical perspective of acknowledging accessibility and the spatial layout of spaces, this provides certain methods for the analysis of relative accessibility of alternative design choices. Studies within this field mainly focus on the deliberate design of spaces that are intuitively, meaning that it is accessible to a variety of users and understanding of the aspects signifying specific types of behaviors(Hillier & Hanson, 1984).

The basic composition factors of spaces are categorised as shape, line, colour, texture and form. These will be examined in detail, explaining the contribution of each within spaces.

Shape & Form

Shape is a flat two-dimensional area enclosed by lines. there are a variation of two dimensional shapes these can be categorised into Square, circle, equilateral triangle, pentagon, hexagon, octagon, diamond, marquis, ogive, star (Rigdon, 2005).

Shapes can also contain other aspects which can give a distinction and identification for a shape these aspects can consist of the value of the shape, the colour or the general texture. (Rigdon, 2007) Every form of an object are conceivably composed of shapes, design elements are some form of shape that will be observed. Shape is categorised into two aspects:

Categories of shapes

- Mechanical shapes: mechanical shapes are comprised of geometric shapes; these kinds of shapes can be drawn be using equipment such as rulers and compasses. Mechanical shapes are artificial shapes that are produced and controlled by human beings(Lauer & Pentak, 2006).
- Organic shapes: these shapes are formally known as natural shapes and can be designed without the use of equipment; these types of shapes share the same characteristics of the natural environment(Lauer & Pentak, 2006).

Shape can also carry the other characteristics of design elements such as colour, texture, line, form, and light. The formation of shapes within space can define the boundaries in space which can also be nurtured with other design elements to add aesthetics and value to a shape formed within space (Lauer & Pentak, 2006).

Form

Shape is a flat two dimensional area enclosed by lines, Forms on the other hand are Three dimensional area enclosed by a surface (Rigdon, 2007). forms that are hollow have volume, forms that are solid have mass (Rigdon, 2007). there are a number of forms and shapes these can be categorised by,

1. Equal sided

a. Shapes – Square, circle, equilateral triangle, pentagon, hexagon, octagon, diamond, marquis, ogive, star

b. Forms – sphere, cube

2. Unequal sided

a. Shapes – oval, scalene and isosceles triangle, rectangle, parallelogram, trapezoid, heart, teardrop, paisley, club, spade, pear, kidney

b. Forms – tube, cylinder, cone, pyramid, rectangular box, bell, dome, ovoid, egg, hourglass, trumpet, barrel

(Rigdon, 2007)

Line

Line is more of an artistic design element and is mostly referred to when expressing a two dimensional space; but line has certain characteristics that are perceivable within three dimensional space. To understand its three dimensional means we must first assess the two dimensional. Line is defined as a stroke or mark and is used within two dimensional drawings where the length is longer than the width. It is one of the fundamentals within two dimensional drawings. What line provides within three dimensional spaces are the contour lines, division of space and the decoration elements of a shape (Rigdon, 2005)

- Contour line: The contour line is a line that defines the boundaries and edges of a three dimensional forms. This is not considered as a means for only the outside edges; but could also be used to define a fold of a shape/form, or a colour change(Lauer & Pentak, 2006).
- Division of space: The division of space happens naturally with the use of line. The line defines the edge of the space that is divided, and it can also allow the space to be identified as two separate parts (Lauer & Pentak, 2006).
- Decoration: Shapes and patterns can be decorated by the line. The line is mostly used on linier shapes and patterns. They are mostly used to distinguish a total value within colours or to emphasize the general theme of the shape (Lauer & Pentak, 2006).

The perception of line with three dimensional spaces is naturally formed within the physical space any type of shape, form, pattern, colour, or even a shade of light can formulate a line that can be perceived within the physical space.

Colour

Colour can create many physical and psychological effects within any type of space. It is what gives the essence to any given space, with the advancements of recent research techniques and analysis methods. The identification of colour influences the cortical activation this is defined as the brain wave, the functions of the autonomic nervous systems, these are known for the regulation of the human body's internal environment. To clarify the body responds to colour and arouses emotions and adds aesthetical associations with colours, the response to colour is total and affects us both psychologically and physiologically (Kaufman, 1999).

“Colors can create a warm relaxing atmosphere, a cool refreshing atmosphere, or even a chaotic stressful atmosphere! It all depends on how many colors are used, and the palate they are chosen from. One rule of thumb that many apply is the 60-30-10 rule, where their dominant color uses up 60% of the wall space, furniture and artwork. The secondary color takes up 30% of the space, and the accent color is a mere 10%. This keeps a room from feeling like a stressful sea of colors!” (Ayana, 2012)

Therefore, if colour is a major component of space as a stimulus for our senses, its use must be carefully adjusted to arouse certain emotions to get sufficient results within space types. The change of hues (colours) within an environment is significant as it can affect the psychological motor of our sensory systems and our general perception of a space. Consciousness, perception and thought can only be preserved with the constant change of environment. If the environment does not change, ‘sensory deprivation’ occurs, sensory deprivation causes concentration deteriorations, attention fluctuations and perception fades (Biren, 1988). Therefore if there is no colour differentiation within spaces, a space then lacks its perceptual means of interaction between the space and the formal object. The need for colour differentiation and variety is best summarised by Faber Birren(1983):

“In response to environment, people expect all of their senses to be moderately stimulated at all times. This is what happens in nature, and it relates not only to colour and changing degrees of brightness, but to variations in temperature and sound. The unnatural condition is one that is static, boring, tedious and unchanging, variety is indeed the spice- and needed substance-of life” (Birren, 1983. p.15).

Overall colour has a major impact and presence within every type of environmental space whether the spaces are enclosed or exterior based, colour gives every design element such as forms/shapes, lines and textures their essence and variation values, allowing the environments to be experienced in diversity.

Texture

Every type of material has a significant texture, textures are usual on the surface; surfaces that we perceive with our environment. Textures can be categorised with the natural textural environment and the manufactured textures. Humans subconsciously know about the textures of the natural environment such as the textural attributes of trees, water, sand, stones, gravel, vegetation, wood, leaves, grass, and many more types of natural textures. At the same time we are aware of the manufactured texture surfaces that we tread on such as asphalt, carpets, brick, concrete, hard wood, cut stones, planks, terrazzo, tile, wood decking, linoleum, lawn, marble. All of these texture types carry with them a significant identity which adds to the overall value of the materials. Textures grant a space with aesthetical value which contributes to the composition of space, due to facts that every type of material used in creating a space already has its textural component within its visual make up (Thiel, 1980).

Alongside the visual look of textures, some may have certain feel to them when touched. Texture initially means sensations we acquire by touch. If we touch and feel the surface of an object it can feel slick, rough, sandy, hairy, bumpy, or coarse-woven. Texture can include both physical and psychological effects. Textures within art are all visual based and cannot be touched or felt physically. Visual texture is a sensation gained through visualisation; but it is interpreted tacitly. In relation to space texture plays an important role within space it gives both its physical aesthetics and also acts as a psychological corner stone as to what the space may feel like when touched (Zelenski & Fisher, 1995).

Light

“How Much more mysterious and inviting is the street of an old town with its alternating realms of darkness and light than are the brightly and evenly lit streets of today!”(Pallasmaa, 2005, p.46).

Light is the most fundamental element within space; without light nothing in the physical environment can be perceived visually. Light in regards to space has a major impact; reasons' being without light, no space is visible to the eye. Lighting can affect our every aspect of perceiving an environment, also the sensations felt within a space, visual perception, in terms solely related to light and the levels of luminosity. Light is mostly identified and defined as form givers of design. Daylight and artificial lighting rendered within a space identifies the limits of shapes and the dimensions within spaces. Every shape within a space is determined with the level of light and provides the spatial attributes within spaces (Lam & Ripman, 1992).

There are two forms of lighting these forms are categorised into natural light which is gained from the sunlight and artificial lighting which involves the use of lamps and other sorts of lighting fixtures. Each types of lighting provide their own positive uses. Positive aspects being that natural light is use during day time hours and saves energy consumption of electricity, artificial lighting is used when there is no daylight present, (Loe & Tregenza, 1998). on the contrary humans tend to use artificial light even throught daytime, which may be the byproduct of the amount of natural light an interior recieves. Lighting therefore is a needed element in perceiving the physical environment, without it there will be no means of achieving sensations within the visual field, or identifying shapes, textures colours or any type of design element which is included in the natural formation.

the basic composition of physical space have been discussed, the human intervention within space will be clarified to understand how spaces are used and for what purposes.

2.1.1.2 Human interaction in relation to physical place

The physical elements of space have been discussed above, it is significant to understand the interaction between space and the human. Some factors of human intervention are necessary to understand how humans utilise space, and what space means to humans. Human beings and his/her space will focus on how humans developed attachment values and how this progressions lead to spaces becoming places on physical and emotional levels.

Yi Fu Tuan (2001) in his book space and place discusses the meaning of space for human beings, as the fundamental basis and foundation of all the experiences we have within the context. Human adaptation to space is a natural act; we modify the physical environment to meet our requirements of life, this may come in many forms such as shelters, roads, lighting, landscaping, and buildings, all these notions refer to the habitable world that we live in (Tuan, 2001).

This modification process is essential for one to grasp and understand the limits of any given space. When this modification takes place on a physical level the space bares more meaning to its former form, therefore allowing the space to be experienced on an emotional level after its alteration (Tuan,2001).

This is not to say that space is initially meaningless, every space is continually experienced due to facts that space is the interface for interaction between the environment and a person. Experiencing a space subsequently allows you to develop

and give value to space. Value of a space is a very significant aspect to a person, due to reasons that the value of a space can only be obtained by individual experience of a space, and through modification of a space we start to experience (Tuan, 2001).

The world we live in was formed long before humans were born but it was powerfully shaped through human action (Day,2002). during the childhood of humanity humans were inseparable and one with the natural surroundings (Day,2002). during adolescence humans peaked the age of the revolution (Day,2002). The adulthood of humanity is characterized as thought led action which we are legally responsible for (Day,2002).

Humans are known to have a high capacity and tolerance to live within a wide range of environments, humans also have high adaptive features and utilises this feature to overcome the hardships of new environments, sometimes at the cost of one's physical, social or spiritual health (Day, 2002).

As Yi-Fu Tuan (2001) discusses in his book 'space and place', he refers to space as freedom and from space we create a place for security and shelter, in a modern day studies animals also have a sense for their territory we share certain behaviour patterns as animals, creating our shelters with our basic needs of food, water, rest and protection.

These statements ties into the manipulation of space for the personal needs of the human within his or her environment and by manipulating space we manufacture our territory, the personalisation of a space which then leads to the space manifesting into a place. He refers to space being more abstract then place, when a space is

familiar to a certain being it transforms the idea of the space having more value infusing it into a place (Tuan, 2001).

2.1.1.3 Maslow's theory

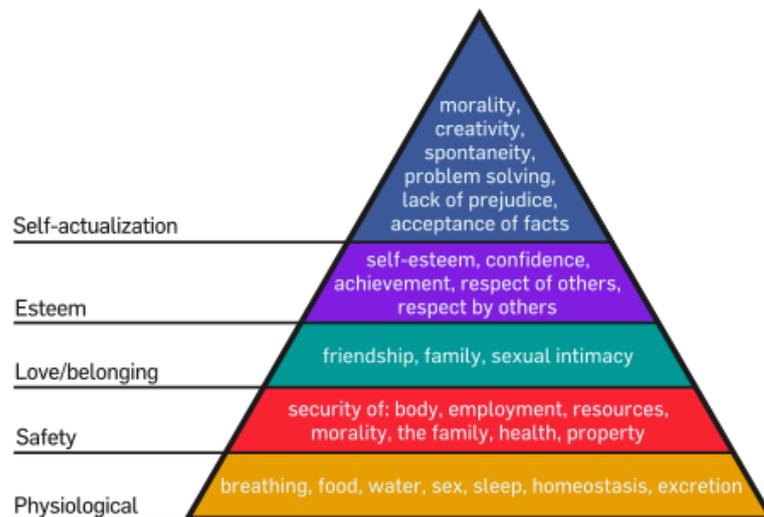


Figure 1: Maslow's Hierarchy of needs (Simons, Irwin & Drinnien, 1987)

It is important to note that space can be one of the basic needs of a human, and could have significant impacts in the physical and emotional growth of a human being. Abraham Maslow, in 1951 theorized the basic needs of a human, he suggested that physical, social and emotional factors play an important role within the growth of a human beings. He categorises these factors into five: love, esteem, physiological, safety, and self-actualization.

Maslow (1951) represents his idea of the needs of humans in his pyramid; Maslow's hierarchy of basic needs, as shown in figure 1. In this pyramid we can see the basic needs of humans, space or place plays an important factor in human growth it can be seen in three aspects of this pyramid, physiological, safety, and belonging all of these three aspects are in need of a physical space to proceed with our most basic needs, then come in the more emotional aspects such as love, esteem, and self-actualization

Physiological: these are the most basic needs of a human being, the essentials of life, water, food, breathing, sex, sleep, homeostasis, exertion. these are all the natural needs of a human being.

Safety: after the fundamental needs of human beings the need for shelter arises, a form of protection, a place to stay and live within, the feeling of family and health, a place where resources could be stored or utilized.

Love and belonging: after the physical needs of a human being such as food, water, etc. Love and belonging start progression such as family, friends, sexual intimacy. the basic social needs of a human being the feeling of belonging to a place.

Esteem: when all three basic needs are met; physiological, safety, love and belonging, a human beings self esteem is met, becoming more confident, respecting others, gaining respect from others, being able to achieve more.

Self actualization: attaining all the fundamental needs provides an individual with creativity, morality, becoming more problem solving, spontaneous and the acceptance of facts(Simons, Irwin & Drinnien, 1987).

The hierarchy is argued on the fact that if our most basic needs are not met then we can not proceed to the higher levels within the pyramid. Therefore analyzing this thought with the physical properties of space can shed light on the issues of not having shelter, protection, territory, food, water or other basic needs of people. Therefore an individuals place is a very important factor in how we humans develop knowledge and emotional growth (Simons, Irwin & Drinnien, 1987).

The physical factors of space brings to light the physical formation of a space and focuses on the elements within the formation, such as shapes, light, colour, texture, line. Within the definition of these elements, both the physical qualities and the emotional impacts of the factors were justified.

The physical elements where explain with the traditional definitions and their counter parts to intangibility within perception. Then the physical human interaction within space was explain, how humans adapt to spaces, the fundamental needs of space in relation to humans', but more importantly the magnitude of physical space and the effects towards humans.

To support this idea the Maslow's hierarchy (1951) of needs was investigated to define a concrete factor in how important space is for a human, identifying the fundamental elements within space that contribute to a human's growth both physically and emotionally. After the significant elements of physical space were defined and discussed, the basis for the non physical space was set.

2.1.2 Emotional facts inherited within the definition of space in relation to the human beings.

Space defined by its physical properties can be accurately examined, amongst the physical properties there is an intangible emotional side, which inevitably cannot be analyzed in relation to its properties. Space has a multi facet of both physical and psychological implications. The psychological aspects of space are the non visual, intangible space, meaning that it could not be touched or visualized physically, but rather felt emotionally. An intangible sense of a space happens naturally through our experiential perception of space. Our interaction between spaces feeds our emotional sense of the space; this can be closely linked to our territorial behaviours, our personalization of spaces, the values and the memorial factors that affect our psychological approach towards the physical environment (Tuan, 2001).

The concept of environment in social psychology developed slowly based merely on conventional ethological and ecological definitions (Walter De Gruyter, 1997). The first representation of social analysis of space as an important factor in the way it affects human behaviour was found and exercised by Lewin (1951). Lewin proved that individuals are a part of a system where all the behaviour they portray depends on the environment that they are within. Lewin (1951) goes on and defines the perception of life space for a person is the foundation of environment interaction; he includes the different factors that establish an individual's reaction or behaviour in several situations.

Lewin (1951) separates the concept of environment into two contrasting levels; the first level is where environment is seen in material, objects and entities as in the psychical things that are placed in the environment and secondly the environment

being seen in psychologically, where the environment is seen by the qualitative properties that are linked to the people within the environment for example the importance of the equipment and the understanding of the environment and the behaviours the individual performs within that specific environment (Walter De Gruyter, 1997).

2.1.2.1 Personalization

Personalization within the field of physical space can have affects upon human psychology. The interaction or for a better term modification of a space, is essentially ones personal impact upon a space, changing anything within the physical space to suit your own needs is the act of personalisation. Within the definition of the word personalization it states that to personalize is to endow your own qualities or characteristic aesthetics (Bartholomew, 1974).

Personalization has aspects within itself that affect the way we sense, behave, or use spaces. Some of these aspects are notions such as territoriality, values, attachments, memorial. All of these aspects play an important role within the emotional context of spaces (the intangible part of a space), experienced only by individual preference (Bartholomew, 1974).

personal space of a human being is an important factor, personal space as a concept attracted plenty of attention during the late 1960s this concept was an idea of Edward T. Hall (1966). Hall discusses that intimate, personal, social and public distances between people concerned a variety of channels in communication such as hearing, vision, touch and smell. Hall (1966) also mentioned how spatial zones were utilized within various situations, relationships and cultures (Altman, Vinsel & Brown, 1979).

Hall (1966) suggested that personal space occupied an invisible boundary that is unseen around a person, intrusions to personal space can produce stress, withdrawal or defence. In a joint review of research Hall and Vinsel (1977) observe a consistent finding that humans react negatively to extensively close approaches by others, this exhibits flight or defensive behaviours within humans another way of response is stares, verbal comments, shifting of body movements/positions, and the use of objects to create barriers (Altman, Vinsel & Brown, 1979).

This goes to suggest that people personalize space to ensure their own comfort zone, their own modifications to space to make them feel safe and comfortable from outside intrusions.

Psychological ownership

Psychological ownership is referred to the state where people begin to develop feelings consciously and unconsciously of ownership over several objects, materials and immaterial objects in nature (Pierce, 2002). It is known that civil society began when someone fenced a piece of land and claimed it to be his/hers and others accepted and regulated the same action, hence the understanding of personal space and private or owned areas are respected and not intruded. Psychological ownership contains both psychical and emotional attachment, it is created by attitude, thoughts, reaction and actions.

Therefore some ownership revolves around mind and some revolves around psychical action. Observations show that ownership and the attitude it brings are common among people. Scholars suggest that people have a psychology of 'mine and property' which makes the person attached to the object. These findings provide somewhat a little evidence to show possession, property and ownership seen in human

beings. This is what we refer to as psychological ownership, it is a cognitive-affective state that defines the human condition of territorial behaviour (Pierce, 2002).

Territory

Personalization cannot happen if a certain territory is not established, through personalization come the creation of territory. This is closely linked into the ownership psychology previously talked about. the sense of one's own space is the definition of territory. Ethnology has significantly shed light on the importance of territory, particularly the fundamental need of the separation and distance of space from others.

An animal's territorial behaviour, meaning the physical and intellectual actions they perform in their natural habitat or captivity has been studied globally and extensively. the importance of how the animals act within their territory and the differences in their behaviour that they display. Animals mark and divide their territory either by leaving odour or a specific stain that other animals can see or sense (Walter De Gruyter, 1997).

Furthermore animals are known to be protective and defensive within the territory that they have marked, they keep their territory safe and defend it from any type of intruder, similar to how humans keep their house safe and separated from others. The territory marked usually maintains three crucial functions that the animals need in order to survive; the territory supplies the animal with food, defence that allows the animal to protect it, and finally exploration that allows the animal to explore and acknowledge the environment without being in danger (Walter De Gruyter, 1997).

The concept of territory has been used in ethnology and has been applied to human behaviour. observations of animal and human behaviour have referred to human

behaviour being similar to animal behaviour. Observations show that animal and human behaviour towards territory are the same; humans also have territorial instincts and portray somewhat the typical behaviours of protection, defence and privacy within the territory that they have marked as their own, like animals do (Walter De Gruyter, 1997).

Territoriality refers to the occupancy, the initial marking and the control of certain areas and objects within the physical environment and sometimes includes the defence of the territory in response to intrusion. (Altman, 1975) on a line of research into territoriality Altman (1975), Stokols (1978), Altman and Chemers, (1986) expressed that territories are often marked in form, these markers protect certain places from invasion. A related theme is that territorial behaviour enhances the functioning of social systems by minimizing the conflict and smoothing out the social interactions within society (Altman, Vinsel & Brown, 1979).

Crowding

Studies of crowding done by (Altman 1975; Stofols, 1978; baun & Epstein, 1978). suggests that the inability to distance others from ourselves is threatening and debilitating. Not only has this research that excessive contact is negative, but it has examined how people struggle to regain an acceptable level of inaccessibility from others (Altman, Vinsel & Brown, 1979).

privacy

Privacy has been of significant interest to variety of disciplines. philosophers have addressed ethical issues of privacy ; sociologists, political scientists, and lawyers have focused on invasion of privacy; architects have attempted to design homes and other places to ensure privacy. For most disciplines, it has been assumed that it is important,

psychologically, for people to be able to avoid contact with others, subsequently the traditional thought on privacy fits with the assumptions that are the basis of the study such as personal space, territoriality, crowding and contrasts with those implicit in social penetration theory (Altman, Vinsel & Brown, 1979).

Values, attachments & memorial (place)

Humans naturally develop emotional ties; feelings, attachments to the spaces they dwell in. This study is within the field of social psychology where there are numerous acclaimed thoughts on the subject. The 'sense of place' is frequently discussed within the aspects of human attachments, values, or the memorial factors that relate to space (Cross, 2001).

The diverse discussions about the sense of place is a culmination of different fields coming together to resolve the issues concerning 'sense of place', some of the different fields consist of anthropology, environmental psychology, geography, landscape architecture/ history (Cross, 2001).

The 'sense of place' is the initial concept of understanding how people develop attachment to certain spaces. The examinations and interpretations of different fields upon this concept are to be discussed; these thoughts are not the accurate definitions of 'sense of place' rather they serve as a commonality and consistency of ideas that are frequently brought to light.

Place attachment, is best defined as a human's emotional or affective ties to a place, is most of the time thought to be the result of a long-term presence and connection with a place (Low & Altman 1992) This is different from saying a place is special because it is beautiful, which is often a simple aesthetic response. For example, humans can

have an emotional response to both beautiful visually unattractive places, but this response may sometimes be thin and fleeting (Low & Altman 1992).

there is a distinction which Schroeder (1991) suggests which is “meaning” versus “preference. with this model Schroeder (1991) defines meaning as the feelings, thoughts memories and individual interpretations inspired by the landscape and preference as the degree of taste in liking an environment compared to another. For a place to hold deeper meaning and emotional attachment to develop, a long lasting relationship between the place is usually the significant factor (Schroeder & Ostrander, 1991).

The social science of anthropology suggests that the sense of place is the sharing of cultural emotions and values within a particular space or land, thus having symbolic relationships with the people that formed the space. It is thought that the space is the basis of a group or individual that is significant to understanding the environment in relation with humans. Therefore the process that link people to places is more than just an emotional or cognitive experience, it incorporates cultural beliefs in the process of attachment to the spaces (Low, 2000).

Other fields such as environmental psychology have different views on the subject of ‘sense of place’, Frits Steele (1981) in his book, the sense of place, refers to ‘sense of place as being an experience of an individual within a particular environment. He also mentions how the setting also affects the sense of place; setting is the environment around a certain individual (Steele, 1981). The effects of setting could be physical aspects or social elements within the surrounding space. The word ‘experience’, is in regards of sensual stimulations, feelings such as excitement,

comfort, aggressive, joyous, etc. He then goes on to state that the spirit of a place has a factor that is significant to the sense of place. Within certain environments characteristic combinations may give a special feel to a space such as mystery, awe, holy, etc. This subsequently makes it easier to familiarize a person or group with the space (Steele, 1981).

John Brinckerhoff Jackson (1997) argues that the sense of place, is something that we develop with the course of time. He refers to time as being the main factor within the sense of place that is significant to the individual. He then expresses how to define sense of place by suggesting that sense of place is a recurring of events through time.

This goes to say that the sense of place is a space an individual is spending time in, the more time spent the more impact the space has for the individual, this can be closely linked to the cognitive notions of the brain, the familiarization and knowledge of the space, effects our level of emotional responses regarding the space.

The sense of place discussed by sociologist David Hummon (1992), refers to the topic by suggesting that people's perceptions of their environments are either conscious or subconscious feelings of environments. He touches the topic of sense of place by saying that it is inevitable in within its nature, and that it contains a dual notion of both physical interpretive perspectives on the environment and an emotional response on the environment. Sense of place is one's personal relationship towards a place, where the understanding and emotional feelings of the place is consistent within the context of environmental meaning (Hummon, 1992).

Yan Xu (1995) develops an overarching concept of sense of place for a variety of different academic fields and studies. Xu (1995) suggests, perceptions and bonds to a place are formed by four significant components:

- 1) Toponymic, related to naming places.
- 2) Narrative, involving personal or group stories or legends.
- 3) Experiential, associated particularly with dependence and survival.
- 4) Numinous, or spiritual.

This concept suggest that experiences and legends that occurred in specific places needs to be used by journalists to create the sacred sense of belonging.

All in all we can agree on space having a dual aspect of both emotional and physical properties, the controversy of the dual nature of space is that one is tangible and the other is not, one can be analyzed where the other is more complex to analyze. But the both are closely related where the physical cannot be detached from the emotional implications, every space is therefore inevitably sensed.

2.12.4 Formation of place

Norberg SchluZ (1996) cited in Nesbitt (1996) discusses the phenomenology of place as within the formation of place there are certain factors that construct the idea of place for example forests; a broad landscape which contains trees and natural habitat, whereas a town consists of houses and human occupation. The word "landscape" is an inclusive phenomenon. Each environment or in other words landscape differs

from one another. A widely used defining term for environment is referred to as place. Furthermore it is almost impossible and worthless to imagine a place without orientation of locality. Place defines an environment that contains integral parts of existence. When the thought of “place” occurs, more comes to the mind than just an abstract location. When thinking of a location, the totality of concrete materials such as the objects, substance, shape, texture and colour that the environment consists of are thought of as a whole rather than just a location. When these elements combine as one it creates an environmental character or atmosphere to the location allowing it to be more than just a landscape and having emotional impact on humans that are within the environment. Moreover this allows the location to endure the nature with its natural surrounding and allows the environment to gain an atmosphere both psychially and emotionally (Nesbitt, 1996).

Christopher Day cites in his book “Spirit & Place” (2002) what place is fueled by he suggests, that the spirit of a place is fed by individual attitudes and actions, who initially built, administer, and maintain the use of.

Day (2002) is expressing his own views on what actually fuels the development of place as an emotional aspect, he believes that place is generated by the level of interaction and the attitude and actions that are present within the place, another factor is the person who dwells within the place naturally generates a sense of place.

2.2 Sensations and the perception of space

The study of human sensations cannot be maintained without the concept of perception; perception within every manner is significantly related to the human sensations. The stimulus of the sensations may enter through information perceived in bits and pieces of the physical world. We perceive the world as an integrated whole that is bombarded by objects and people, under certain conditions do we notice the individual aspects of the stimulus, that is transferred through the notions of three-dimensional objects, the sounds of words or music, the smell and physical feel of the physical environment. Our sensational responses to physical space are interpreted by our own individual perception, which allows us to sense certain aspects of a space, according to our own expectations within the space (Ciccarelli & Meyer, 2008).

The ecological approach to perception originated in the work of the American psychologist James J. Gibson (1904-1979). James Gibson (1979) discusses visual perception in his book *The ecological approach to visual perception*, within visual perception Gibson(1979) suggests is that the information that we gather is obviously in light. Gibson (1979) argues that light is a term that is loosely used, the meaning differing according to the different sciences it is used in. Within the science of light; light is referred to as optics, The science of vision is also called optics. Gibson (1979) tries to distinguish this confusions by suggesting,

"The light as physical energy, light as a stimulus for vision and lights as information for perception" (Gibson, 1979, p.47)

Gibson (1979) goes further on to explain his own thoughts about ecological optics he expresses his idea as,

"What I call ecological optics, is concerned with available information for perception and differs from physical optics, from geometrical optics, and also from physiological optics. ecological optics cuts across the boundaries of these existing disciplines, borrowing from all but going beyond them."
(Gibson, 1979. p. 47)

ecological optics refers to several distinctions that are not common in physical optics. the distinctions can be categorised into, luminous bodies and non luminous bodies; the differentiation between light as radiation and light as illumination, the variations of radiant light, exiling outward from a source, and ambient light that is localized in a medium where an eye might be structured (Gibson, 1979).

The sensation system of our bodies can be defined through a passive process of gathering and processing information from the physical world into our brain (Ciccarelli & Meyer, 2008). The process is defined as a passive motor in consequence that we are not consciously fixated and engaging in the process of sensing. Perception in the other hand is a active process of identifying, organising and interpreting specific information carried to the brain by our sensual systems.

Ciccarelli & Meyer, (2008) carried this notion out by the steps of sensing:

- Sensation being felt
- 1) The sensory system picks up energy and stimulus through the physical environment.

2) The sensory receptors change the energy into neural impulses that relays them back to the brain.

- Perception follows:

1) The brain then organizes and interprets the information and converts it into something that we can relate to something that is meaningful.

2) Then the questions arise as to how meaningful the information processed is to the individual, and why it should be a focus point?

These questions lead to how perception actually functions as our receptor for the brain these fields must be explained so that the basic principles of perception could be understood, to understand how we actually interpret our physical space (Ciccarelli & Meyer, 2008).

2.2.1 Perception of the built environment

Perception is a study of how we communicate our sensations into the percept's of forms and objects in our physical world. There are many reasons behind the importance perception; the following question has been focused within perception: 'what problems does our perceptual system solve?' this question relates to the perception of objects, forms, and space. The researchers on the study of perception argue that; perception is necessary to be able to move around in the physical environment. This thought is derive from the visual awareness of the physical aspects of objects and relates to how safe or dangerous a object or form could be, as an example when we visually see an apple we instantly know that it is edible, or an opposite if we see a wolf we instinctively know not to tread into its territory due to the harm that it can do to us. Considering this notion of thought it is consistent with

the idea of perception could in fact help us to positively operate within the physical environment (Woods, 2000).

in perception there are aspects that help us in perceiving space, one of the relevant aspects are pattern recognition or recognition for short. Pattern recognition is a crucial point within perception; it allows us to remember certain critical properties of objects, therefore increasing our knowledge on what the object is and what it serves as within the physical environment (Waterman, 1985).

The act of remembering an objects properties and identifying its place within space is called spatial localization. We obtain spatial localization through vision, visual objects within space allow us to determine how far or close, tall or short, wide or narrow the objects are within space. Spatial localization is a critical ability that we utilize to navigate through our environment, without spatial localisation we will be inevitably bumping into objects, not being able to grasp objects that we reach for or even moving through a path of dangerous objects (Atkinson & Hilgard 2000).

Visual perception is only one of the ways we perceive, although there are other sensory systems which provide us with sensation. Within this section all the sensory systems will be explained in regards to understanding how the different systems help us to perceive our environment. All of our sensory systems when combined can allow us to have multi sensational experiences within spaces. Each of the sensory systems complements each other in every aspect one can perceive what the other cannot, this allows for sensations to be felt in differentiation to the other (Atkinson & Hilgard 2000).

2.2.1.1 Gestalts theory of visual perception

Perception in relation to the fields of architecture and interior design cannot be explained without the theories of perception. Gestalts theory of perception is closely linked to the underlying base of design, it brings forward some of the basic principles within design that we perceive visually. Although some believe that the gestalts theory of perception has some flaws to its composition, it does in fact provide the necessary stepping stone into understanding how visual perception works within the fields of design.

The gestalt principles of visual perception was a movement in experimental psychology which erupted prior to WWII, the theorists involved in the study was the first group of psychologists that systematically studied perceptual organisation during the 1920's, in Germany. The theorists involved with the research was Wolfgang Köhler (1929), Kurt Lewin (1935), Kurt Koffka (1922), Ernst Mach (1926) and particularly the research work of Christian von Ehrenfels (1922) and Max Wertheimer (1912).

The word gestalt is a term used within psychology the meaning of gestalt is acknowledged as the “unified whole”, the gestalt theory is based upon how humans tend to organising visual elements, into unified wholes or groups when definite principles are applied (Ho, 2010).

‘The whole is greater than the sum of its parts’- Aristotle (Laertius, 2011) quoting assertions attributed to Aristotle.

There are six principles of the gestalt theory these are categorised as similarity, continuation, closure, proximity, figure and ground. These principles will be

analyzed in detail as to what they offer to our visual perception of physical objects within space (Gordon, 2004).

Similarity



Figure 2: Gestalt's Theory similarity: Anomaly (Source: None, 2012)



Figure 3: Gestalt Theory similarity: Similarity (Source: None, 2012)

Similarity occurs when a set of objects look visually similar to one another, when this is the case humans perceive these objects as a group or a pattern. Figure 2 is perceived as a whole due to its similarity of elements; the triangular forms and the eagle symbol have the same triangular similarity creating the unifying whole, therefore allowing us to perceive the pattern as a group. As opposed to figure 3, figure 3 expresses an anomaly within the pattern as we perceive the three similar patterns as a whole or group we discard the other pattern as separate to the whole of the pattern. Similarity relates to how humans group and disassociate certain patterns or shapes within the environment to gain awareness and a conscious spatial understanding of the spaces we live in (None, 2012).

Continuation



Figure 4: Gestalt Theory: Continuation (Source: None, 2012)

Continuation is the process of how the eye is compelled to move through objects and perceive other objects within the proximity. As we look at figure 4 continuation occurs, our eyes automatically follows the horizontal curved line going through the two vertical lines, the eyes almost always ends up at the leaf pattern. When perceiving it as a whole we can understand the pattern first then our eyes proceed with the movement of continuation (None, 2012).

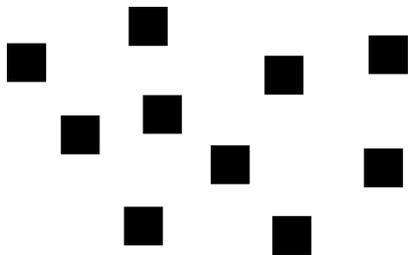
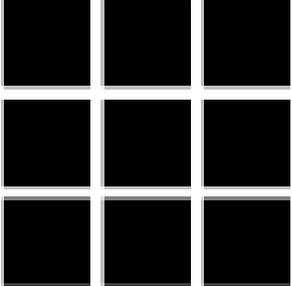
Closure



Figure 5: Gestalt theory: Closure (Source: None, 2012)

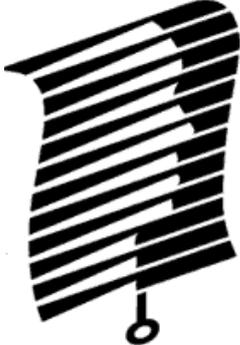
Closure occurs when an object is not complete. Our perception of the object is then forced to complete the missing information upon the patterns, as seen in figure 5. Figure 5, shows enough information on the panda that we can fill in the gaps of missing information, completing the shape within our minds. Closure occurs when an object is not complete; but enough of the shape is revealed to fill in the information through perception (None, 2012).

Proximity

Separate shapes	One group
 <p data-bbox="312 779 817 853">Figure 6 : Gestalt Theory: Proximity: Separate shapes (Source: None, 2012)</p>	 <p data-bbox="874 779 1350 853">Figure 7: Gestalt Theory: Proximity: One group (Source:None, 2012)</p>

Proximity is gained when different elements of shapes, objects or patterns are placed together, when placed together with proximity the quantity of the elements are perceived as a whole. The two examples figure 6 and figure 7 show the opposing rule of proximity, When we examine figure 6 we can perceive that they are the same elements of shapes however the nine squares are not within proximity to each other therefore being perceived as separate shapes, As opposed to figure 7 where the nine squares are within proximity to each other, allowing the elements to be perceived as a group rather than being perceived as separate elements though they are separate in nature (None, 2012).

Figure and ground

Simple figure & Ground	Complex Figure and ground
 <p data-bbox="327 741 804 842">Figure 8: Gestalt Theory: Figure & Ground: Simple (Source None, 2012)</p>	 <p data-bbox="895 741 1406 842">Figure 9: Gestalt Theory: Figure & Ground: Complex (Source None, 2012)</p>

The figure and ground relationship acts as a significant role in the perception of objects and the surrounding environment. Figure is referred to as the object that is being perceived, ground is referred to as the background environment that the object is within, thus creating the terms figure and ground relationship. The balance of the two elements, can provide a clearer understanding of the perceived images. A non balanced figure ground relationship could arise interest and subtly to an image being perceived. These two figures are good examples of figure ground relationships, in figure 8; we can perceive the figure as a silhouette of a face along with the ground of black lines that run through the image. Figure 9 has a more complex composition of figure and ground relationship we can perceive the leaves as a figure, also the water as a figure. Through the ground, we perceive the tree trunk as a background, although at the same time perceived as a figure. Humans experience figure & ground within the environment all the time; but it is our perception that defines the figure or the background of the physical environment.

These elements within the Gestalt's theory of visual perception are necessary in understanding how our perception processes certain types of information within the visual world. Humans unconsciously process these aspects into securing our familiarity between objects, forms shapes, texture, colour etc. Although the Gestalt's theory seems to be solid, there are sometimes the odd questions that assume the theories flaws, such a question would be on the lines of; 'What is the simplest of organisation?' Another problem associated with the gestalt theory is that the study has a phenomenological approach, therefore not having a stable grounded theory (None, 2012).

2.2.1.2 Muller Lyre theory of perception

Muller Lyre's experiments within the theories of perception have to be noted. Muller Lyre 2011 used a series of optical illusions that was then referred to as the "Muller Lyre effect." The main purpose of the Muller Lyre theory being referred to is that it goes to show that sometimes our perception of objects, spaces, can be effected in multiple ways with simple alterations (Lyer, 2011).

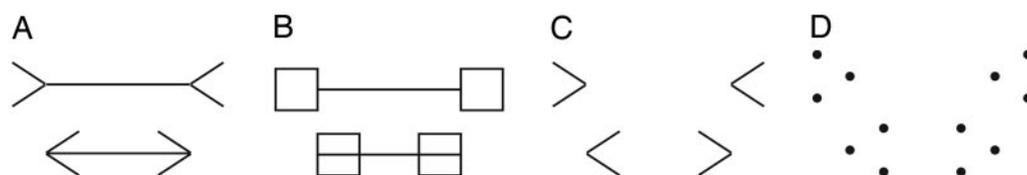


Figure 10: Muller Lyre theory (Source Howe & Purves, 2004)

In figure 10, A, we can see two lines and arrows pointing in different directions, while the line is the same length the positioning of the arrows create an optical illusion where we perceive the two lines to be of different length to each other. B the same principles as A apply, in this case squares have been used showing the same logic but with different shapes. C and D are the same shape the arrow shape but in C we can see the arrow shape illustrated with lines, where in D we see only the outlining dots. Both the same shape but perceived as difference to each other.

Another optical illusion within D is that the dots make you perceive three different directions the dots are pointing too, in fact they are stationary and our perception is responsible for the illusion (Howe & Purves, 2004).

2.3. How are spaces sensed?

It is a fact that we gain sensual feelings through our perception. However the sense of a space can come through multiple sensory systems of the human body. Therefore what types of stimulus can spaces provide for us? Through example, imagine a forest filled with trees and greenery, the natural world itself provides us with a mixture sensation, the scent of the trees, the tactile nature of the forest, the visual natural beauty, the hard terrain, the sounds of birds and insects, in a spatial sense it fulfils our need for sensual experience.

If the natural environment provides us a multisensory experience, then how does our artificial environment nurture our senses? The same rules apply when picturing a city with busy roads full of cars, the heightening towers, the scent of food around every corner, the ray of sunlight creating shadows and glints, the sounds of cars/people, it still does provide a sensual experience either conscious or unconscious, negative or positive. In this section, the sensory systems that provide us with these sensations will be examined in detail.

2.3.1 Sensory systems

In order to understand perception, the main sensory systems of a human must be clarified. Due to the facts that sensations are interpreted by our perception (Krantz, 2005). There are five different sensory systems; the visual system, auditory system (hearing), somatosensory (touch), gustatory (taste), olfactory (smell). These five sensory systems will be explained briefly outlining the significance of their uses in perception and how they communicate or interpret our sensations (Krantz, 2005).

This part of the research will not focus on the scientific specifics of the sensory motors; but rather the sensational base that the systems produce through how they operate within the physical environment.

2.1.1.1 Visual system

The visual system has been discussed by Goldstein (2009) he explains the visual system focuses on sensing and perceiving light waves.. Light waves perceived within environments can differentiate according to the levels of light the environment is exposed too, whether these are natural light or artificial light. The wave length plays an important role within the light waves; wave length of a light is also regarded as a frequency where the longer a wave, the smaller amount occurs or the faster it occurs. Wave lengths are to catalysts in the way we perceive colours within our visual systems. The wave amplitude contributes to the size and the height of a wave this effects the brightness perception of the light present within the environment (Goldstein.E.B 2009). Visual perception is a key ability to interpret the physical environment, the interpretation is only allowed by the level of visible light within the environment, the information contained within the visible light is then processed within the brain (Gibson, 1979).

The factors of perception within the visual system are also known as vision, sight or eyesight, these combined together forms the visual system (Goldstein.E.B 2009).

The visual system interprets colour in various ways, the vision of colour has different theories that calibrates the idea of the perception of vision some of these theories contain the trichromatic theory and the opponent process theory.

Colour Vision Theories:

1) Trichromatic Theory

This theory lays out the idea that we receive 3 different types of wavelength of light (red, green, and blue) to process colours accurately upon surfaces.

Two famous researchers Thomas Young and Hermann von Helmholtz (1802) gave their contributions to this theory. The theory became more potent when Thomas Young proposed that colour visions results gained are through the processing action of three different receptors. They both experimented with this theory in various ways. Helmholtz (1802) experimented this idea with colour matching experiments where participants played with the distributions of the three colours to match a certain test colour within the experiment. Participants could not match the colours by using two of the colours, all three of the colours needed to be used to create the test colour. This theory then became to be the Young-Helmholtz theory of colour vision (Sensation and perception).

2) Opponent- Process Theory

This theory was developed by Ewald Hering (1892). He suggested that there were some colours in the colour spectrum that we could not process. Colours such as reddish-green or yellowish-blue. The trichromatic theory outlines the major component of colour vision by the combination of the three colours and the process system, where the opponent-process theory suggest that there are some colours that cannot be seen with the trichromatic theory. The opponent theory implies that colour perception is controlled by two opponent components the blue-yellow mechanism and a red-green mechanism (www.pshychology.about.com, n.d).

These theories suggests that perception of vision could variat with the fields of light consistancies, and colour combinations ceating a versitile perception through vision.

2.1.1.2 Auditory system

The Auditory system begins to function when motion or vibration from an object forms a pressure wave which is transmitted through the air and creates sound (Atkinson & Hilgard, 2000). Pure tones play a major role in how we interpret sound due to the changes in their frequency, intensity and the time at which they are set in motion. These are the psychical aspects which determine how the tone is experienced since frequency is what triggers our sensation of pitch and intensity our sensation of volume. Similar to colour being the prime factory of light; whilst listening to a pure tone, we experience not just the volume but also the pitch, the pitch is the prime factor of sound (Atkinson & Hilgard, 2000).

Theories of pitch perception

Similar to colour vision, two contrasting theories have emerged for how the ear codes frequency into pitch. In 1886 the first theory was published by a British physicist named Lord Rutherford he claimed that; sound waves cause a vibration to the entire basilar membrane, and that the rate of the vibration was equal to the frequency of the sound. Furthermore he claimed that the rate of vibration the membrane experiences determines the rate of inclination of nerve fibers in the auditory nerve. Consequently a 1,000-hertz tone makes the basilar membrane vibrate 1,000 times per second, which makes nerve fibers in the auditory nerve release 1,000 impulses per second, and the brain identifies this to be a particular pitch. Rutherford's theory (1886) soon became unexplainable because it failed to explain how we interpret pitch tones that are beyond 1,000hertz. This theory is called temporal theory due to the fact that it claims that pitch relies on how the sound differs with time (Cheveigné, 2004).

In 1683, the second theory of pitch perception was found by a French anatomist named Joseph Guichard Duverney. He claimed that frequency is coded into pitch mechanically by means of resonance (Green & Wier, 1984). His theory assumed that the ear was structured similar to a stringed instrument. Different parts of the ears structure are tuned into different frequencies, so when a frequency is presented to the ear the parallel part of the structure vibrates. He compared this with an example of a turning fork struck put near a piano, the piano string that is adjusted to fit the frequency of the fork will start to vibrate. The theory suggested that with frequencies below 50 hertz, the same level of vibration in all parts of the basilar membrane are approximately the same amount, meaning that all the receptors are equally activated.

Therefore according to the theory we have no way of discriminating frequencies below 50 hertz. However in fact, we are able to discriminate frequencies as low as 20 hertz (Atkinson & Hilgard, 2000).

Reminiscent of temporal theories, place theories explain the many occurrences of pitch perception, however fails to explain all. The temporal theory fails to explain how we are able to interpret frequencies higher than 1,000hertz whilst the place theories fail to explain how we are able to interpret frequencies lower than 50hertz. These results led to the understanding that pitch depends on both place and temporal pattern. Contrasting to the two-stage colour theory, the theory of pitch has not yet been concluded or developed into a complete theory (Goldstein.E.B 2009).

The environment is one of the main factors in how the nature of sound reaches our ears. Every element within a space effects the way sound travels; the way sound travels is dependent on the environment in which it is originated from. Sound can reach our ears directly and indirectly from other sources, this sometimes creates problems in our perception of sound, the reasons being that we can perceive many sounds coming from many directions; the problem is with each sound reaching our ears at different times. This creates discomfort for listeners because it is harder to perceive the sounds which are more dominant (Goldstein.E.B 2009).

2.1.1.3 Touch

Touch or the scientific term the "somatosensory system", is one of our five senses. The significant difference with this system is that it is not localized primarily in one part of the body such as the visual system (located within the eyes) or auditory system (located within the ears). Touch is the only sensual system that is spread around the whole body from the top of the head down to the tip of the toes. (Home science tools, 2011).

The somatosensory system is solely responsible for every sensation we feel through touch, such as cold, hot, pain, pressure, vibration. Smooth, rough and so on. There are four main types of receptors within the somatosensory system; the mechanoreceptors, thermo receptors, pain receptors and the proprioceptors. These receptors will be explained to understand the properties of how we sense and perceive through touch (Landau, 2009).

Receptors of somatosensory system:

- 1) Mechanoreceptors: The mechanoreceptors mainly functions in perceiving sensations such as texture, vibrations and pressure (Landau, 2009).

- 2) Thermoreceptors: As can be identified by the name the thermoreceptors perceive the sensations of the temperature of objects the skin touches (Landau, 2009).

- 3) Pain receptors: The pain receptors identifies and detects pain or any other stimuli that can relate to the skin receiving damage or other bodily tissues damage (Landau, 2009).

4)Proprioceptors: or 'ones own' in latin: Refferes to these receptors sensing the position of the parts of the body and thier constant relation with the surrounding environment (Landau, 2009).

The skin of our bodies acts as a barrier between our physical world and our internal body. The sensation of touch is our way of contact with our physical world. It is the only sense that can achieve the interpretation of the environment with a physical action and contact of our body with objects. The sensation of touch is gain through nerve receptors within our skin that transmits electrical information through the central nervous system into our brains by the use of the cerebral cortex, which then information contained within the electrical impulses are processed (Classen, 2012).

Touch receptors for the most part specialises in experiencing different types of aspects such as hot, cold, pain or pressure. Touch is important part of the senses, without touch our sense of hot, cold, pain or pressure would not be communicated to our brains, this will lead to many issues with functioning in the physical world. As an example if we did not have touch we could not identify if water is cold or hot therefore leading the risk of our skin to freeze or be burnt. It is arguable our most important means of determining if an environment is fit for living (Classen, 2012).

2.1.1.4 Smell

Atkinson & Hilgard (2000) explain that Smell or scientifically known as "olfaction constructs" of molecules that are given off by a substance; the molecules travel through the air and penetrate through to the nasal passage. The olfactory system consists of several receptors, districts of the brain and interrelated neural pathways.

When the hair-like structures are contacted by the odorant an electrical impulse takes place, this is how the transduction process of smell is completed. Smell is the most imperative and primordial of all senses as the organ which provides sense of smell has a distinctive location in the head. Due to this, smell has a more direct route to the brain than the other senses as the receptors in the nasal cavity are connected to the brain without synapse (Atkinson & Hilgard, 2000).

Our sensitivity towards smell relies majorly on the substance that is to be smelt. For example; the change of a familiar smell or the smell of something that is new or unfamiliar, the specific identification and attachment to a smell and finally the distance to the substance. Some researchers claim that we identify with six basic odour qualities which are; spicy, putrid, resinous, ethereal, burnt and that all smells can be considered phenomenological into one or more of these six qualities (Woodworth,1938).

Dissimilar to the coding of colour in visualization and coding of pitch in audition, the reaction the receptors give differs according to the odorant and can have diverse responses to many odorants rather than to one specifically. Our perception and sensation of smell relies on environmental factors such as weather or atmosphere if it

is cold, warm or hot. Distance whether we are near or far from the substance. Time whether we experienced the smell being created or experienced the smell after its development. Finally place whether it is indoors or outdoors, in a specific room or the entire building. If these factors change then our perception and interpretation of the smell can have major differentiations. (Atkinson & Hilgard, 2000)

2.1.1.5 Taste

The sensation that triggers taste is a soluble substance found in saliva which is a fluid that resembles salt water. The gustatory system functions with receptors that are localized primarily on the tongue, some components of the brain and neural pathways. On the tongue and around the mouth consists of taste receptors which are referred to as taste buds; taste buds are hair like structures that allows a substance to be received within the mouth, sending an electrical impulse that is transmitted directly to the brain (Artoshuk, 1978).

There are different locations amongst the tongue that enable the sensation of taste to be perceived. There are four main tastes that our tongues identifies these four tastes are interpreted on different locations of the tongue. These four tastes can be categorised as sweet, salty, sour and bitter. The senses of salt and sweet tastes can be received at the tip of the tongue, sour tastes along the sides of the tongue and bitter at the very back on the soft pallet of the tongue. The middle section of the tongue is an insensitive region of perceiving taste (Atkinson & Hilgard, 2000).

Goldstein's study of taste reveals that all tastes can be identified by the four basic tastes, even if they are combined, subjects who are asked to identify the taste responded by answering through four basic qualities of taste which are salt, sweet,

sour, bitter.(Goldstein, 1984). Smell has a major impact within taste in ways such as, if smell is disabled for any matter of reasons taste automatically non functional. Therefore taste is considered to be the least affective sensation the human body perceives (Atkinson & Hilgard, 2000).

2.4 Chapters 2 Synopsis: The scientific facts in relation to the subject matter

A variety of topics have been discussed within chapter 2, which have set the theoretical base and background knowledge for the main topic of the thesis. The theoretical background and knowledge will serve as a primary support for the discussions within chapter 3 and 4. The topics explored within chapter 2 focused on the main scope of theoretical understanding of both the physical properties of space and the emotional impacts of space. The summary of the second chapter is as follows:

The physical facts inherited within space

The physical factors of space brings to light the physical formation of a space and focuses on the elements within the formation, such as shapes, light, colour, texture, line. Within the definition of these elements, both the physical qualities and the emotional impacts of the factors were justified. The physical elements were explained with the traditional definitions and their counterparts to intangibility within perception. Then the physical human interaction within space was explained, how humans adapt to spaces, the fundamental needs of space in relation to humans', but more importantly the magnitude of physical space and the effects towards humans.

To support this idea the Maslow's hierarchy (1951) of needs was investigated to define a concrete factor in how important space is for a human, identifying the fundamental elements within space that contribute to a human's growth both

physically and emotionally. After the significant elements of physical space were defined and discussed, the basis for the non physical space was set.

Emotional facts inherited within space

The emotional factors that play an important role in regards to sensations were explored to bring forward the idea of space having a dual notion of both physical factors and emotional factors. Within this part of the research the emotional ties to space was explored. Aspects such as personalization of space contribute to an individual's bond to space. This happens when an individual customizes a space for their own intentions and needs. This process is one of the basic steps in how humans develop a certain bond with a space and through personalization, comes other emotional factors that are in relation to this aspect, for instance, personalization leads to territorial behaviours within the space.

Territorial behaviours within space were discussed in this part of the research. The ethological values of territory was explained and its human factor within the process. The similarities between animals and humans in relation to territory were explored, significantly defining the importance and territorial behaviour within marked space. The concept of psychological ownership was briefly discussed to clarify the meaning of human territoriality, psychological ownership refers to how humans began to territorialize within the modern world, how it first took place, and how it leads to an individual's territory.

The further important factors that play a part in the emotional context of space were discussed, which comprised of place attachment, values and memorial links to space. These factors subsequently opened the research into new areas such as the

phenomenon of space and place. The concept of space and place is initially thought of as space being the more abstract form of the physical environment where place is the more concrete term in relation to human environments. Taking into consideration of all the emotional factors, space and place was explained through a sensual filter, identifying that place is derived more from the emotional aspects of space rather than the physical properties. The formation of place and how change can affect the sense of a place were analyzed with views from different types of fields of social sciences, such as anthropology, environmental psychology, geography, and architecture/history. This concluded the emotional and physical traits that integrated the idea of space as being dual in nature intertwined by physical and emotional properties.

Perception and sensation

Under the light of the previously discussed topics the physical and emotional aspects of space were defined in detail, but how do we actually perceive space was not touched. Therefore in the perception and sensations part, the processes of perception and our sensory systems were brought to light. Perception is mainly a visual factor that is utilized when interpreting a space. This is due to the facts that the environment can be explained and analyzed upon its physical properties such as the texture of materials, the hues of colour, and the effects of light. These comprise the natural environment in a visual sense. Within the definition of perception, the theories of Gestalt and Muller lyre were explained. The two theories are closely linked to the field of design and needed to be exposed to understand how we perceive certain design principles.

Through perception we gain our sensual feelings. The sensory systems within the body provides us with a multi sensual experience in every aspect of our daily lives.

The sensory system was covered in depth, identifying the main sensory receptors of our body and what types of affects they have within our perception five main sensory systems where analyzed the visual system, auditory system (hearing), somatosensory (touch), gustatory (taste), olfactory (smell) within the identification of the five different sensory systems a variety of theories were explained related to the certain sensory system in how perception affects the system.

Chapter 2 clearly identifies the main aspects of theoretical knowledge that will serve as the main supports for the discussions within Chapter 3; Chapter 2 concludes the scientific knowledge that is needed in how we could assess the issues of change and its effects on human sensations. Chapter 2 has formed the idea that space is dual in nature and how humans utilize, interpret and sense space. The scientific knowledge was necessary in determining how certain factors can serve as a catalyst in the change of emotional moods, feelings within spaces that are altered in relation to an individual's personal connection to the space. This idea will be the main aspect in the assessment of how change within a space can occur and the implication of change can affect the positive and negative responses in relation to human psychology.

Chapter 3

THE IMPORTANCE OF INTERIOR DESIGN PROFESSION IN TERMS OF THE SENSATION OF SPACE

Chapter three will try to point out the importance of interior design/ interior designer, in the process of designing spaces that are renovated or adaptive reuse projects. This is one of the critical subjects; because it is dependent on the context of the space that is to be designed and the personal preference/ design approach to a certain space.

Certain questions arise when determining the right design approaches to certain spaces. Some of these questions could be implied as: Should the interior designer consider the context of the space? Should the interior designer take into consideration the personal attachments of individuals in relation to the space? What would be the right approach? Some of these questions can point to how much knowledge and awareness an individual designer has within the context of preserving certain characteristic aspects of space.

Interior design is not commonly seen or acknowledged within the field of architecture as much. However it does play a major role within its composition. Interior designers are responsible in the designing of living spaces in addition the functional interfaces of interiors to make life easier and comfortable. Within this chapter the responsibilities and importance of the interior design profession will be discussed.

Art as a living environment as Abercrombie states in his book *Philosophy of interior design* (1968) refers to the subject of the importance of interior design. He quotes;

"We can live in art- some cannot live happily without it- but we cannot live in art or even in a white cube'" (Abercrombie, 1968 p.47)

What Abercrombie is referring to in this very peculiar assertion. He states that living without art we cannot be satisfied; but then he contradicts this thought by saying we cannot live in art. What he really is trying to say is that interior architecture is a form of art, and art is initially the expression and emotions being translated in various ways. Therefore giving a space over to a completely visual aesthetic (art as a whole) could lose its meaning within an interior space. This thought implying that there are certain degrees of art that can be conveyed within interior spaces. Underlining the importance of balance between artistic expression and clarity of an interior space. Therefore the sensual expression of interiors needs to be meeting expected requirements according to the level or balance of aesthetical values within a space.

Berleant & Carrison (2007) discuss this assertion in their book. "The aesthetics of human environments" where they explain the idea of interior design as an art form by agreeing to Abercrombie on living in art. They also believe that interior spaces cannot be entirely composed of visual aesthetics, and divorcing them from the idea of what it actually means to live and function within interiors (Berleant & Carrison, 2007). This is pointing towards interiors being a balance between visual aesthetics and functional spaces within interiors.

3.1 The role of interior architecture

In this section, the main role of an interior designer will be analyzed in detail. According to different organizations such as the international federation of interior architects/designers (IFI) and the international interior design association (IIDA), that support interior architects' their main views and their underlining of the importance of interior design, will be expressed.

The definition of interior architecture according to the international interior design association is as follows,

“The profession of Interior Design is relatively new, constantly evolving, and often confusing to the public. NCIDQ, the board for Interior Design qualifications, defines the profession in the best way: The Professional Interior Designer is qualified by education, experience, and examination to enhance the function and quality of interior spaces” ("International interior design," 2012).

This is one of the definitions of interior design within the webpage of the IIDA the also signify the roles of an interior designer within the profession. The clarification of the interior design field is also expressed with a deeper understanding in the IFI declaration of Interiors within this declaration it touches on the sensual aspect related to interior design. Before the analysis of the Declaration of interiors, a detailed introduction of the organisation will be examined.

International Federation of Interior Architects/designers (IFI)

The international federation of interior architects/designers, or IFI for short has a significant declaration on the subject of the importance of interior design. The core values and mission statements infuse the importance of interior design. Within the IFI interiors declaration, it points out the most significant factors that are consistent within the field of interior design. The factors contain the value of interior design, relevance, responsibilities, cultural aspects, business, knowledge, and identity. The

declaration will be covered in detail to assess the relevance and importance of interior design. Firstly the background information of IFI will be briefly examined to familiarize ourselves with the organization, defining what type of organization they are and what they support, their mission statements, main aims and how the organization came into recognition (IFI, 2012).

The international federation of interior architecture/design was founded in Copenhagen, Denmark in 1963. It is a non-profit organization. Currently it is representing 270,000 designers all across the globe, which comprises of educators, stakeholders of the industry within the international design community and consists of 110 countries. The International Federation of Interior Architects/Designers is a global organisation to give authority and provide a voice and support for professional interior architects and designers. IFI serves as the sole body for international federation for interior architecture and design organisations. In addition, they act as a global forum where they support the exchange and development of knowledge through experience, in relation to research, practice and worldwide education. IFI is often referred to as the “*united nations*” in consideration to the field of Architecture/Design. IFI is the connection between international communities to contribute to improving the impacts, influential aspects and the application of interior design. Therefore intentions are the promotion of a global social responsibility towards interior design, and to signify an important status of the profession in a worldwide sense (IFI, 2012).

Mission statement

“IFI exists to expand, internationally and across all levels of society, the contribution of the Interior Architecture/Design profession through the exchange and development of knowledge and experience, in education, practice and fellowship.” (IFI, 2012).

IFI Interiors Declaration

“It is the nature of humankind not only to use spaces, but to fill them with beauty and meaning.” (IFI, 2012).

The declaration touches on some of the main subject matters that are discussed throughout the thesis such as the sensual relations to space and the formation of place. Within the declaration it conveys that, a space that is skilfully design can stimulate the sense of purpose or the space being profound in a sensual manner. Furthermore spaces that has a significance to an individual can be experience in a variety of emotions such as the sense of place, in addition the sense of which we are, and our personal capabilities.

A space that is design considerately can be helpful to further our knowledge, our imagination, creativity, discovery, and our self reflection. It underlines the most important roles of interior design through certain factors.

The main aspects of the declaration will be analyzed and discussed on the relevance and importance of interior design, within the declaration the main factors that are focused on are comprised of the value of interior design, relevance, responsibilities, cultural aspects, business, knowledge, and identity. Here the detailed analysis of the IFI declaration will be explained in the light of the subject matter of the thesis.

Value

The interior design profession offers comprehensive management and exploits a process that encounters several categories in both iterative and interactive spaces. For example; discovery which enables people to experience new atmospheres, objects and other unfamiliar or new possessions within the environment. Translation of ideas, design approaches, concepts and the interpretation of space, environment and also validation. Furthermore it provides the ability to construct outcomes that are measurable and improvable in both interior spaces and to those who resides within the space (IFI, 2012).

The process is beneficial in terms of economy, functioning, visual aspects and also has societal advantages. This process assists clients to acknowledge the importance of their value of decision and allocates them to make enhanced decisions that are beneficial to consumers and society (IFI, 2012).

The profession of interior design is suggested to become a reliable influence and to widen research representations in the manners of psychological, emotional and the behavioural pattern of users.

Relevance

The profession has the ability to define projects at their origination and supports the entire field of human experience.

The discipline of interior designers and interior architectures is to combine both human and environmental ecologies and transform science into beauty that addresses every one of the senses.

The aim of the practitioners is to have the capability to be able to detect, evaluate, improve and generate innovative ideas, visualizations and spaces that have assessable principles in manners of value.

Responsibility

The responsibilities that interior architects and interior designers are aligned with is to be able to define practices and to have the required knowledge in the field of interior, to continuously educate and evolve themselves and the society, and to situate interior architects and interior designers in the public's dominion, as specialists of the built environment. Alongside this another responsibility that both interior architects and interior designers have is to expand the profession and activate it for social well-being (IFI, 2012)..

Culture

Being part of creator enterprises and the supporters of constructing cultural productions interior architects and interior designers, they are place-makers that allow society to edit, translate and interpret cultural assets.

Globally, interior design must participate a role in assisting the preservation of cultural diversity(IFI, 2012)..

Business

- Having the profession of an interior design or interior architecture enables the stakeholder to have more value.
- It aids to improve the well-being in terms of economy.
- It provides strategic consideration on leadership, which results in investment multifaceted.

The profession allows and advocates an ongoing education both for themselves and society to interpret and understand the awareness and importance of the profession of interior architecture and interior design (IFI, 2012).

Knowledge

There are three fundamental practices that interior architectures and interior designers exercise which are; theoretical, applied and innate (IFI, 2012)..

The convergence of psychological effects of environment and the science of anthropometrics play a major role to both qualitative and quantitative knowledge that allows the form of interior architecture and interior design to take place (IFI, 2012)..

Identity

The interior designers and interior architectures are the ones, who combine the relation and connection that people have with places, based on factors such as psychological, psychical parameters, in order to improve the well-being and quality of life (IFI, 2012).

The interpretation of these factors in relation to the importance of interior design discipline is cohesive and thorough. It states the most important factors of the profession in the utmost clarity that is an integral part of the interior design profession. It also touches on how important interior design is for the sensual expectations of spaces (IFI, 2012).

3.1.1 The sensual aspects

The sensual aspects that are correlated within interiors furthers the importance of the discipline, the variety and multi facades of space and the natural environment have a significant impact on the sensual aspects of spaces. Therefore the individual consciousness and awareness of such concepts must be taken into consideration, on

such as "what types of aspects could affect a space?" Or "what types of factors affect the spaces in regards to an interior designer?" which will be discussed in this chapter.

3.1.1.1 Tangibility to Intangibility

Our entire habitable world is made up of tangible items, tangible material, that is visible, touchable, testable, can be heard, and smelt, it is what shapes our living environments. On the contrary to tangible items, we all have an emotional bond to spaces we value, taking to thought that emotion or sensual feelings is an intangible asset. We utilize this asset either consciously or unconsciously within spaces. It is a natural development of feelings towards spaces that naturally bonds the physical with the sensual (tangible with the intangible) (Knueppel, 2010).

This connection of intangible and tangible is admittedly unbreakable. They are both act as one. Every aspect of the material world has an intangible affect on our psychological perception of the environment, venturing into the deeper meaning of this relationship of physical matter and non physical matter we can understand its compositional components and what it could provide for any type of designer. The dual notion provides for a multi- spatial experience, but also harbouring a multi sensual experience. For example an object could be both tangible and intangible. For instance let's say a very important piece of jewellery a ring (tangible object), was passed down through a family. To most of the family members the ring has intangible meaning bound to it. This stems from the value it holds amongst the family.

This exemplifies how certain physical matter can hold an intangible meaning. Therefore when we convey this example into the field of interior design where it is

inevitably more complex on the designer's front, we could assume that more complex issue can arise in relation to the tangibility and the intangibility of a designed space. This can be one of the responsibilities that an interior designer needs to consider when taking on projects that are in the fields of renovation or adaptive re-use of a space. The aspect of tangibility and intangibility is closely linked to the emotional side effects of tangible items, objects that hold meaning within spaces. Therefore it underlines the importance of how spaces should be design if the space is significant to an individual.

3.1.1.2 Emotional aspect

Tangible space, in conjunction to the emotional aspects of spaces, shows that not only items, objects within a space could be intangible. The space itself can hold significance among an individual's, such as, experiences, activities, purpose of the space, all these aspects can affect the way the space is perceived through an emotional filter.

The emotion of a space, or the emotional impact of a space, could be formed in various ways. Emotional connections to space are a gradual development of a human in relation to the space as talked about in previous chapters. Therefore how does this emotion prevail within a space? This is closely related with the memorial aspects of human beings, recognition of spaces and the feelings tied within the experience of the place allows for an emotional impact, and sustains the memorial factor of the space. If emotion is a significant aspect that relates to humans developing an emotional bond with a space, then it could be clearly regarded as an important and integral part within the designing of a space.

Interior designers are sometimes responsible in the creation of emotional impacts of spaces. The main mission is to design without effecting the emotions in a negative outcome. Therefore what types of considerations must an interior designer situate themselves to create a positive emotional impact? Familiarization of the space could be a first step. Identifying and understanding the context which the space is constructed in, could be supportive in understanding the initial characteristics of a space. This approach is in relation to the physical properties of space rather than the emotional properties, considering the emotion of a space could be identified by the individuals that utilize the space, their perception, feelings and values of the space, could define the emotional context of the space, its meaning, and its purpose.

Therefore emotional aspects are crucial in the creation of a space, due to reasons that space could have a negative emotional impact to a person on a psychological level. This also effects our sensual perception of the space if a space has a negative emotional impact then our senses are inevitable affected with the same manner, in the sense of being irrigative, demoralizing, and uncomfortable as discussed by Altman (1975) within the previous chapter. This underlines the importance of the emotions of space in relation to an interior designer.

3.1.1.3 The Context

The contextual issues of a space could be one of the factors that an interior designer could face. To open up what contextual really emphasizes on a sensual scale could relate to subjects such as; the heritable values of the space, personal bonds, the identity of the space, and the symbolic meanings of a space. Taking into consideration of these facts the contextual aspect is really depended on the already existent environments, of which the space inhabits. Context is present within every

type of design, due to reasons that context is attached to the physical environment that formulates its aspect (Brooker & Stone, 2008).

Heritage plays an important role in context, due to reasons that heritage could affect factors such as values, culture, attachments, personal relationships and symbolic meanings of spaces. Therefore an interior designer must take into consideration the values of the heritage the spaces have attached to their meaning. Heritage can be explained as the ownership or the initially contracted space which has a significant history that bounds it to value and meaning (Sotoudeh, H. 2012).. It is a sensitive aspect of design, meaning that it should be notably concerned subject within the process of redesigning these types of sites (Williamson, 2010).

Personal bonds to context could be an issue when considering the sensual impact it could have during a renovation or redesigning of a space. Personal bonds to context could be formulated both in manmade environments or natural environments, for instance if a person has significant values to a natural environment and it was to be destroyed to build housing blocks, this will surely have a negative impact on the individual. On a smaller scale during the process of an interior space being renovated certain properties of the space could hold personal bonds to the person that utilizes the space within this context. This issue was mentioned within the previous chapter explaining the development of personal bonds to places as discussed by Altman & Low (1975) in the previous chapter on the subject of personal bonds.

The change within the space could rule out the certain properties that were valuable to the person. Therefore context of a space could have a major impact on the sensual and emotional space that is connected to the contextual surrounding of the space.

3.1.1.4 Essence

Essence within spaces could refer to various aspects of a place. It could mean the general atmosphere that the place is radiating, it could refer to the essence of old to new spaces, places that preserve their original essence could be in translation within a new space (Day, 2002).

On this note this could be of importance to an interior designer, almost all spaces carry with them a certain essence. This essence could comprise of the physical properties, emotional properties, style, and characteristics of the space. Choice is the fundamental decision that an interior designer needs to consider if the essence of spaces needs to be preserved or ignored within the process. As a final point regarding essence, the sensual meaning of essence will be discussed.

The sensual meaning of essence in relation to interior design could come through as the atmosphere of the space. The aesthetical value of the physical properties within the space, or the historical essence of items or objects within the space. The essence of spaces plays a significant role in the existent characteristics of a space or the formation of new characteristics within a space. Therefore what types of senses could these notions effect, adding visual aesthetics to space provide us with the essential visual requirements and allows for visual sensation, the addition of items or objects of value could add a degree in the sense of belonging to the space.

3.1.1.5 Sensual aspects and their relations to the subject matter

As it can be seen in the sensual aspects of interior design, they are closely related to each other in ways that one allows the other to function. Another important fact is the concept of space and place. Within the formation of place, all of the sensual aspects

takes place on a certain degree. Underlining that emotions cannot be divorced from the fundamental meaning of physical space; thus if a space has an emotional impact it could relate to either the essence, the tangibility or intangibility, the context of which the space is situated in (Day, 2002).

As mentioned in the previous chapter physical matter or the compositional elements of the physical environment can arouse a multi sensory experience. Therefore sensual aspects in relation the interior design profession can be one of the main factors that sheds the light on the importance of interior design.

Now that we have discussed how certain sensual aspects can underline the importance of interior design, it is crucial to note the main factor that affects this research which is change. The translation of these sensual aspects in conjunction with old and the new spaces is the main theme that will be discussed and argued upon. Change could have a major emotional impact in almost all settings, therefore what does change really mean or how it comes into transition, will be discussed below.

3.2 The evolution of space through the continuous change.



Figure 11: New york city evolution Through time

Source:http://www.newyork-wallpapers.com/wallpaper/new-york-times-square-construction_w349.html

The environment is not static it is in constant movement and change due to natural forces and human interventions . The change within an environment could be either natural or artificially induced (Birren,1988). More importantly what is meant with

the word change and what it actually implies within the subject matter of this thesis. Change within space could harbour many different applications within the profession of design. There is a variety of ways that change could take place within a space. This can range from natural factors or physical forces (Birren,1988).

Natural factors within the change of space could be defined by time. Time in our physical world is not static it is always in motion. It is linear in the sense that it is always moving forward. The decay of materials, by factors such as weather affect the natural environment, natural disasters being the most dominant within the change of the physical environments. Of course the animal life and human aspect has a distinguishing mark upon the environment.

Christopher Day express the idea that our world was formed before humanity was born on the contrary the world was powerfully shaped with human action (Day, 2002).

Human interaction within space plays a major role in the change of the environment. Relating this aspect to contemporary design; we can see that 'change' is utilized more often than in the past. There are or could be many reasons for this, for instance the decrease of space within cities, the existing and unused building stocks, technological advancements affecting the industrial infrastructure, leaving behind waste and space that could not be used. Therefore in present day 'change' has turned into more of a necessity rather than luxury, which is due to the reasons discussed above. Let us not forget that space has a duality of both physical and emotional aspects, here we are only mentioning the physical changes that could occur, and of

course the emotional responses to change will be discussed within an argumentative format.

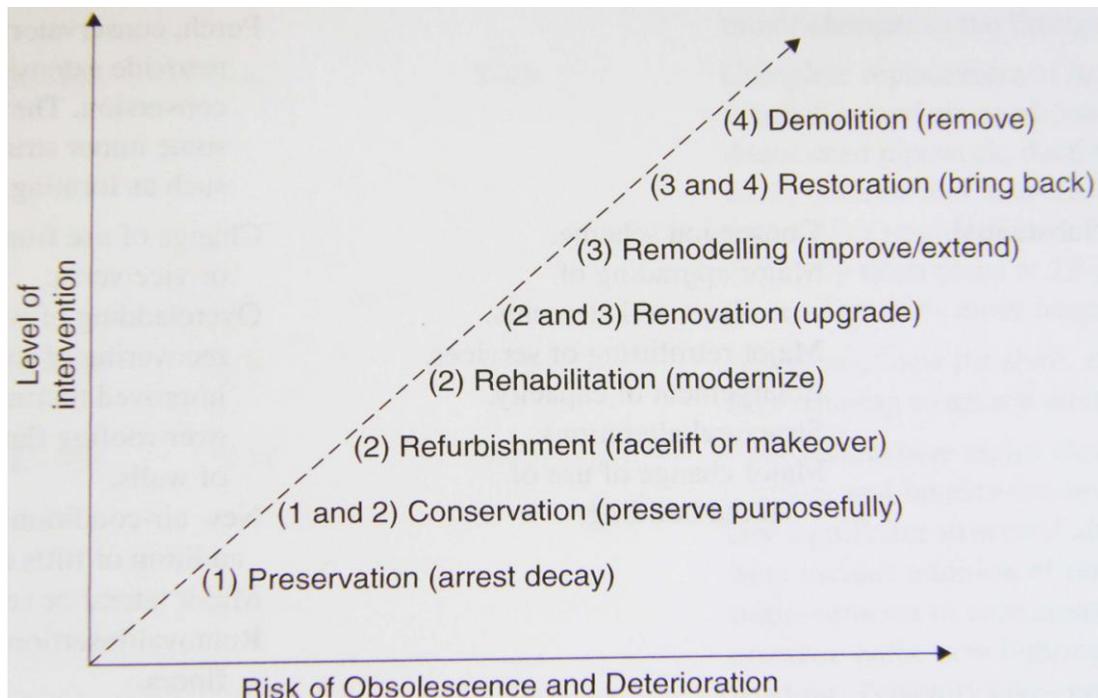
Speaking of the declining of space within cities Cramer & Breitling (2007) claims that new construction of buildings have decreased during the end of the second millennium, particularly in central Europe. Thus signifying the importance of the existing building stock, in addition they believe that the reckless demolition of old building also affects the environment, on both emotional and physical. Demolition is now perceived as an ecological waste, the loss of local identity, the eradication of cultural heritage, and socio-economic value (Cramer & Breitling 2007).

The perspective of change within present day environment could come through different applications according to the interior design profession such applications can be categorised as restoration projects, renovation, refurbishment, adaptive reuse, and revitalization. All these applications point to a certain degree of change within the environment on a physical level.

3.2.1 Renovation/Adaptive Reuse: as a ground for discussion on change in the sensual framework

The preservation of space can come through many forms. It is totally dependent on the project type. These types can be categorised into renovation projects, revitalization projects, adaptive reuse project, and maintenance projects. Therefore certain factors of the emotional aspects of space and how physical elements can affect the emotions has to be in the rapture of a designer's knowledge.

Table 3.2 The range of interventions



(Douglas,2006)

1-Maintenance: Basic adaptation works including fabric repairs (Douglas, 2006)

2-Stabilization: Strengthening the major improvement works to the structure including inserting epoxy resin stitches in wall junctions (Douglas, 2006)

3-Consolidation: Medium adaptation and maintenance works including damp proofing measures and timber treatment(Douglas,2006)

4-Reconstruction: Substantial rebuilding of part or parts of the building (Douglas, 2006)

For this thesis Renovation/Adaptive reuse is thought to be the most appropriate example, as a field, where the emotional aspects of space can be brought to light to allow a more proficient discussion. The meaning added to change within this study refers to the fields of renovation and adaptive reuse, though these fields will not be thoroughly examined certain elements such as the purposes, social issues, economical and political issues will be discussed according to the subject matter. This will serve as a basis for the discussions within this chapter.

Renovation

Renovation is clearly defined in the 'international principles of preservation' as the renewal of a space, taking old spaces and renewing them to suit current standards (Petzet, 2009) this document is part of the Icomos database on renovation. It (2009) also states that renovation is the third widespread method within preservation. Moreover renovation could be a risky process, due to reasons that certain cultural or symbolic places could get damaged during the construction process. Therefore delicacy must be considered with spaces that are going to be re designed (Petzet, 2009).

Furthermore renovation or the re use of buildings could be significant in the translation of old to new, it could serve as a valuable asset in translating culture for

future generations. The use of old buildings and spaces provide for a more sustainable environment, due to facts that were discussed above, as the loss of space or landmass for new buildings. Therefore the initial resources that are required for the reuse or renovation of aspects is less than those necessary for the redevelopment (Brooker & Stone, 2008).

On this note the cultural heritage or memorial aspects of old buildings get transferred with the application of renovation. We could assume that the essence or the contexts that surrounds the buildings already has a certain heritable or cultural aspect, simply changing the interior could affect these factors in positive or negative outcomes (Brooker & Stone, 2008).

Adaptive reuse

Parallel to renovation there is an adaptive reuse, adaptive reuse is the change of function within an old space. For example, within historical context, most of the buildings are bound to live change throughout their life time, functions are altered and adapted to suit contemporary usage. In present day they are used in variety of ways such as, governmental usage, residential usage, commercial usage, consisting of restaurants, bars, shops and so on(Orbaşlı, 2008)..

Almost all buildings live a change throughout their life time. This will inevitably have effects within the internal layout, and plan of the original interior, and furthermore it could have implications that affect the exterior fabric of the old buildings that are adapted to contemporary usage. The adaptive re-use of old buildings to compliment its contemporary function enable its continued usefulness of an old space or building. However not all buildings could be suitable with its fabric

and internal layout to adapt new functions for contemporary usage, therefore this needs to be in consideration (Orbaşlı, 2008).

Adaptive reuse of a building is the process of transforming an existing building to accommodate new uses (Brooker and Stone, 2008). As Douglas (2006) determines: “It means any intervention go beyond maintenance to change its capacity, function or performance.” It includes alteration, conversion, extension and refurbishment. There are various reasons of adapting buildings such as conservation and sustainability (Douglas, 2006).

The implications of applications used to conserve or preserve spaces can be classified as environmentally friendly, allowing for old spaces to be sustained and conserved. Subsequently this allows the spaces to be in constant evolution. Sustainability could factor in ecological aspects in ways that the reuse of an old building is a superior in ecological terms than the creation of a new building. The waste and energy spent on new constructs could be avoided through the adaption of an existing building (Douglas, 2006)

Santralistanbul in Turkey Istanbul is one of the good examples of adaptive reuse illustrated in the figures below,



Figure 12: Adaptive reuse of Santralistanbul Turkey Istanbul

Figure 13: Old Santralistanbul Turkey Istanbul

Source: <http://www.santralistanbul.org/main/index/>

in figure 11 & figure 12 Santralistanbul is illustrated with its old look and its contemporary setting, the interior of Santralistanbul originally functioned as an energy station for electricity, in its modern day function the interior was adapted to serve as a museum of energy where different activities that take place such as lectures, exhibitions and other social activities.



Figure 14: Exhibition hall 1

Figure 15: Exhibition hall 2

Figure 16: Interior containing old power station machines

Source: <http://www.santralistanbul.org/main/index/>

Figures 13,14,15 shows the adapted interior with its new functions serving as an exhibition hall for the museum, figure 15 shows that some of the old machinery has still been kept even after its renovation, this goes to suggest that some of the core elements that keep the essence of the original interior has been kept this could be to preserve memorial factors within the space and contribute to its overall importance.

Social/ economical-political issues

In the midst of all the aspects that are related to the human sensations and ‘change’ that was previously discussed, there are other types of factors that affect the human sensations; these are comprised of life standards of the individual such as the social, economical and political aspects these will be clarified below.

Social aspects

Socialization, when looked at from a perspective of adaptation we can identify its main features. The process of human practice in learning, the cultural aspects of their societies is regarded as socialization. Therefore culture in regards to values and norms develop naturally with humans, determining the underlying responses and behaviours within environments (Haralambos, 1980).

Social aspects such as trends, culture, and heritage could affect the way we perceive and experience our environments. Trends could provide the social movement of styles and expressions within the field of interior design. It is in constant evolution and is affected by our advancements in almost all fields, such as technology, material compositions, communications, transport, fashion, etc. Therefore if social aspects are in constant evolution it genres in the importance of change. Adapting new functional obsolescence is the main stimulus behind adaptive reuse, however the design approach leans more towards the trends, whereas the need for adaptive reuse is not.

Furthermore culture and heritage derived from society one of the catalysts of change. The factors within social aspects effect the general decisions within the approach towards designing new environments within old spaces. Personal preferences apply within the context of decisions and guidelines in the adaptation of old to new.

Economical-political aspects

Economical factors can also effect the change and the general preferences to design in various ways. Affordability and expensiveness of materials effect the choices of both the user and the interior designer, discussing this topic within the range of adaptively or renovation, may imply the meaning of the usage of existing building stocks as mentioned by Ravetz, (2008). He addresses the situation of the issues regarding the existing building stocks, and how new buildings are harmful to the environment, due to reasons that land openings must be cleared, the usage of materials within the construction is subsequently more expensive, then just renovating or adapting old building stocks to new functions (Ravetz, 2008).

Furthermore the context of which region the environment is could affect the initial processes of adaptive re-use. This could be tied down to reasons of past political actions. Therefore the new contemporary issue within the regions are affected by the regional aspects/political.

Jean Baudrillard, defines the 4 object valuing criteria, that relates to the subject discussed above. This is how he perceives of social/economical and other attachment values that are intact to objects (Baudrillard, 1996). He classifies them as,

- 1) Function – a pen is used to write
- 2) Exchange or economic value- a piano being worth three chairs
- 3) Symbolic- an amethyst symbolising a birth in February
- 4) Sign- the branding or prestige of an object, with no added function being valued over another, it may be used to suggest social values such as class.

This is the proposal that Baudrillard (1996) defines certain attachments to objects and their value amongst other materialistic aspects, looking at it through its social aspects and economical aspects.

Existing building stocks



Figure 17: Unused Existing building stocks Source: www.takiplen.com

there are many building stocks that are not being used and just left alone Figure 16, this is a very important issue, and is emphasised in Joe Ravetz (2008) Article, " the State of the stock—what do we know about existing buildings and their future prospects?" Discusses what types of change affect the uses of existing building stocks. Ravetz goes over issues such as the social trends, the cultural aspects, contemporary movements that lead change within cities and settlements. Ravetz also refers to how

fit for adaption will the existing building stock be in the future, in relation to the factor of technological advancements, new functions, social trends, movements of these trends in conjunction to the technological advancements (Ravetz, 2008).

The author states that with this perspective of the usability of the existing buildings within the future, he comments on important factors where he categorises (Ravetz, 2008).

The physical perspectives consist of the initial building form and fabric, the structural construction of the building and maintenance, the climate change impacts upon environment, mitigation of populace and adaption in the physical sense of infrastructure of utilities and transport, the biodiversity meaning the use of structural greenery, and the already existent environment, streets, blocks, and pavements (Ravetz, 2008).

Secondly the geographical and spatial perspective within appropriateness consists of national and regional infusions of industries, post- industrial or the dormitory types. The spatial formations of suburb typologies, the inner city and outer city and so on, this makes way for factors such as accessibility, mobility, such as the network of transport aspects (Ravetz, 2008).

Thirdly the socio- economic perspectives that consist of the social lifestyle trends, the behavioural states, mobility fads, communication, property market and localization factors such as values the local community and the social economy issues, also the neighbourhood services both public and private (Ravetz, 2008).

Fourthly the aspects of policy and governance are mentioned this refers to the urban renaissance or the sustainability of the community throughout its discourse. Furthermore there are the issues regarding the local governance and the urban change management in relation to the areas of high or low growth (Ravetz, 2008).

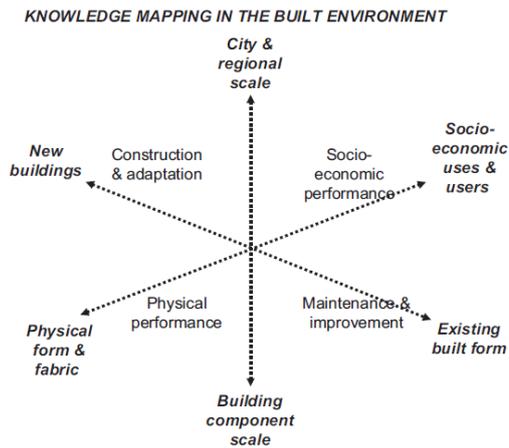


Figure 18: Knowledge mapping in built environment (Ravetz, 2008)

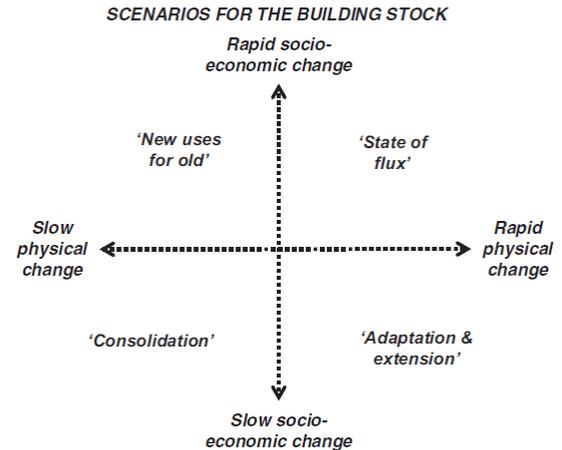


Figure 19: Scenarios for the building stock (Ravetz, 2008)

With the general categorisation of the factors that affect the usability of existing old building within future context, Ravetz added two diagrams explaining the need for or how the need for change arises. these two graphs are Ravetz own interpretations of how change occurs Firstly Ravetz identifies the knowledge mapping in the built environment, then he charts possible scenarios that could be of outcome, the illustrations are shown in figure 11 and figure 12. As seen in these two figures, the factors that create the way for renovation or adaptation of old buildings to new functions. Moreover the figure 12 shows the speed at which change happens through certain factors, underlining the importance of change within our contemporary world.

The sensual aspect to change

As discussed within this chapter, change plays a significant role within our present environments. Through this analysis it brings forward only the physical aspects of change along with the certain applications that support the idea of change. On a sensual level what can the factor of 'change' imply on our human senses, when taking into consideration all of the factors that physical change provides for the environment.

The identification of space has brought to light the suggestions that physical matter is bound with the immaterial field of emotion. Therefore simply speaking about change through its physical matter will not suffice within the context of emotion. With these facts in mind, the argumentative side of this topic could be purely subjective in the matter of the sensual side effect of change.

Change could imply a variety of circumstances in the field of design; by this we could assume that if our senses respond to any type of physical element within space. On the other hand what if a new physical objects or form used within or throughout the renovation or adaptation of a space, It will most probably provide a response in relation to our sensations. Therefore change could open up new perceptions to a space that is experienced.

The observation of change holds significance when discussing about the sensual aspects that it could affect. Why is change important within the context of emotional response? As mention in the previous chapter, if space was static and non changing, our sensual experiences does not meet the standard of expectations of a space. Furthermore earlier we also discussed how important space is for a human's

psychological growth. Referring back to the IFI interiors declaration (2012) it clearly states that spaces that are thoughtfully designed could help our development and discovery, our creativity, sense of belonging, our personal identity. The consideration of these factors highlights how important change could be when taking into consideration human sensations.

The clarification of how human's developing bonds and emotional ties to space have been explained in detail within the previous chapter. The implications of change within a space could also have an effect on the personal bonds or emotional ties to a space. (Altman & Low 1992) This is where, awareness and essential knowledge of a designer is utilized. How can a designer note or pre determine the effect of the designed space in relation to the emotional impact it could create? Could it be achieved in the sense of familiarization with the space, in the physical manner, or does a designer need to focus on both the physical aspects and the emotional values that are attached to the space?

Certain considerations or action could be taken on the designer's part when thinking about the reuse or renovation of space in regards to the sensual impacts the design could produce. When discussing space, we could refer to the public scale of the matter or the private scale concerning the sensual effects change could bring, either way it is a very subjective field, meaning that both private and public spaces are bond to personal preference. On the other hand, it also relies on the personal values and approach of a designer. Therefore when relating 'change' to the subject matter we could encounter issues within the sensual context. Such as if a designer renovates or adapts the space to new functions does he/she design according to the their own values and understanding, or if they take the physical properties of the space as the

guideline of their design, does the sensual aspect play any role within the approach of the designer could be of importance.

These types of factors should gain more importance when taking on renovation or adaptation projects of old spaces, due to reasons that the users of the space could have certain values and sensual attachments that conflict with the designer's approach. Creating unwanted negative end results if the two are not harmonized.

On this thought, certain steps could be taken to avoid such negative outcomes, but this is solely related to the designer and his/her own interpretation of how the space is to be design and what is of significance note within his/her approach. The steps that could be taken can consist of two aspects, through the identification of the physical properties of the space in confirming the characteristics, and physical boundaries, or context of the space and through the identification of the sensual aspects and meaning the space holds for its users, in the sense of emotional values, intangible items/objects, personalization factors, not to forget the memorial aspects, sense of belonging that could be attached to the spaces. Through these considerations a designer could make his/her self aware of certain boundaries a renovation or adaptation design could hold in avoiding a negative outcome on the user's case.

Christopher Day & Parnell (2003) in the book "Consensus design socially inclusive process, suggests of a method that could support the idea of renovation or the adaptive reuse of old spaces". He suggest of a concept called consensus design, consensus design aims to involve the public or private users within the design projects, by involving the users it is much easier to create a balance between the physical properties and the sensual impacts of a space (Day & Parnell, 2003).

Dr Colquhoun (1985), is cited within Day's book describes 'four layers of landscape' that relates to the subject matter on the significance of place within environmental settings that factor in the emotional aspects such as the recognition of the essence of place and the oneness of matter and spirit, relating the space or place as almost being human in nature, Colquhoun describes these steps as;

- The solid objects, physical facts, the 'bedrock' of the place;
- That which is constantly changing, flowing and growing;
- That which lends character to a place, gives its unique 'atmosphere' and appeal- so inducing feeling responses in us;
- And that which is the essence or inner reality of a place.

Here it clarifies the physical make up and the development of our emotional feelings towards space underlining the essence of the place as a significant factor (Day & Parnell, 2003).

The idea of community design could be beneficial within the fields of renovation or the adaptive reuse of old space, due to many aspects that could help identify issues that could occur after the design is complete. Community design does not exclude the users within the initial design process, it includes the users to share their own views, and values that could aid the project in to a positive outcome.

What are the plus sides of a socially inclusive design? One of the main factors that make this a sufficient and reliable approach is that you can get both sides of the picture, meaning that you already got the professional side which are the leaders within the project such as the architect or interior designer which are more adept and concentrated on the physical matter of space; but alongside this you have the users of the place.

Therefore what does this thought imply when including the users? By referring back to the previously discussed matter of 'change', the identification of the issues that could occur was discussed, such as the sensual/emotional feelings not transitioning into the renovated or adapted space space. The socially inclusive process could be one way that this issue could be solved. By the introduction of the users, we actually gain the answers that we need in the fulfilment of their expectations of both the physical matter and the emotional outcome the place could provide.

The personal attachment to places, is where the initial problem arises. Therefore through including the users into the design process could aid with solving problems such as the value, personal attachments, the memorial aspects that affect the individual, the personalized space, that factors in when change is imminent within the design.

There are many different ways a person could attach themselves to a space, by shedding light on the types of relationships to place we can determine the outcome level of the affects that 'change' could imply, Table 1 below shows the types of relationships to place a person could have, this also relates to the sensual aspects of place, and the types of bonds people develop within a place.

The use of this table 1 as a guideline within the socially inclusive process could be used as possible outcomes that could be determined, in which positive results could be achieved.

Table 3.3 Relation to space

Relationship	Type of bond	process
Biographical	Historical and familial	Being born in and living in a place, develops over time
Spiritual	Emotional, intangible	Feeling a sense of belonging,
Ideological	moral, ethical	Living according moral guidelines for human responsibility to place, guidelines may be religious or secular
Narrative	mythical	Learning about a place through stories, including: creation myths, family, histories, political accounts and fictional accounts
Commodified	Cognitive (based on choice and desirability)	Choosing a place based a list of desirable traits and lifestyle preferences, comparison of actual places with ideal
Dependant	material	Constrained by lack of choice, dependency on another person or economic opportunity

(Cross, 2001)

According to table 1, there are many relations that we develop within a place. Therefore if the socially inclusive process ‘consensus design’ involves the users within the design process, gaining these types of facts could help in identifying the essence or the importance of values that are attached to the place that is going to be designed.

The only flaw that could come from this type of approach to design, is freedom of expression. If the designer is bombarded with too many factors that he/she needs to consider, it limits the space of which creativity could come into place. Freedom of expression is also needed within the context of design for reasons that it allows for innovative, creative, and also authentic/original expressions.

In this case, a balance needs to be constructed within what facts to consider and what facts are to be discarded, all in all it is a suggestive matter. Therefore it primarily depends on the awareness and knowledge of the designer. The manner of interpretation of the space, and the considerations and factors that the designer employs is bound by personal preference. However the consideration of emotional facts and sensual aspects still holds significant importance.

The idea of 'change', place, and the aspects of sensation, are essentially all related together. The sum of all the arguments and discussions will be looked at later to identify the focal points of this study, in relevance to renovation & adaptive reuse.

3.2.2 Fulfilment of the need for physical and emotional requirements within old spaces to new spaces

The previous part has discussed and argued about the importance of interior design in the regards of renovation and adaptive reuse, with the influence of human sensual aspects.

Physical and emotional requirements within a space is an essential part of the human responses to the environment, which has been signified within the previous chapters. When change occurs it brings along both physical change and emotional change. By

looking at the topic of renovation and adaptive reuse through the perspective of 'change', it is more appropriate in determining what factors affect our senses.

When we talk about fulfilment, we are relating to space in the basic terms, but also the deeper meaning of space. We have gone over the subject of the physical properties of space and the emotional side that is attached, the formation of place in physical matter and emotional matter in detail within the previous chapter.

Fulfilment could imply the expectation that we standardize within space. Natural environments provide with the essential stimulus we need in our daily live. On the other hand, we have our manmade environments which tries to imitate the fulfilment we gain from our natural environments as stated by Day, (2002).

Within all of this context, it is a known fact that time plays a factor within the standard of expectation, in the change both at a physical level and an emotional level: Physical being the progress and advancements in technology, material, innovations in the industrial complex, energy, transport services. In addition to the physical factors, all these changes that occur effect our lives through changing means in how we express and relate ourselves to the contemporary interfaces on a psychologically. Taking a view at the topic from a larger scale, we could assume that human advancements, affect the way we communicate, express ideas, socialize, and more importantly the adaptation of design within this continues change.

In the thought above the movements in change need to be up to date with the design community. Not being up to date with contemporary trends and social movements,

could limited the success within the design profession. So how does this all relate to the usage of old spaces in the adaptation/renovation process?

By adapting old buildings to a new context could have major impacts within the realm of fulfilment, through the consideration of all the aspects we have discussed. It aims to shed a light on the importance of the sensual aspects that are reflected from space. On a concluding note we have discussed that the fulfilment of both of the aspects of physical and emotional are of utmost importance when considering change within a space due to many factors.

3.3 Chapter Synopsis: Reuse/Renovation, Place and the Senses

The structure of the chapter synopsis: Revitalisation, place and the senses, will firstly go over the main topics that were discussed and argued upon. Followed by the examination of the topics through the lens of relativity to the subject matter and what the combinations of the topics mean when considering the purpose/possible solutions.

This chapter goes over topics that form the main view of the subject matter, taking into consideration the change subject and adding different meanings to the word in the context of the thesis.

To begin with we discussed and pointed out the most important facts about the interior design profession and its uses in the manner of sensual aspects. The views of different organizations were put together to form a knowledge base that interior designers and architects are responsible for sensual outcomes within designed spaces.

Furthermore the sensual aspects within an interior designers responsibilities were discussed, which comprised of tangibility to intangibility, emotional, context, and essence.

Change was discussed in the manner of what it meant for the main idea for the thesis. Change could have many classifications within itself, however the study took the most important factors of change through the perspective of interior design. The identification of change came through the aspects of renovation and adaptive reuse. Why these were more important other applications of change is because it relates to the field of interior design and more importantly it provides a more appropriate look at how the senses could be affect through the application of renovation or adaptive reuse (through change).

The general understanding and knowledge behind renovation and adaptive reuse was defined. The importance's of these two applications were brought to light such as environmental aspects of the two, in the sense of preservation. This supports the idea of why should the existing building stocks be used. The factors that follow the idea were clarified such as excessive waste and pollution, the decrease of landmass, and the increase of unused buildings, brought the subject of renovation and adaptive reuse into a more necessary rather than luxury perspective.

Following the section on renovation and adaptive re-use, certain factors that could affect change were discussed. Social aspects, economical/political aspects where investigated through the lens of interior design; what these factors initially mean to a designer. Social aspects such as trends, fads, innovations, culture, and heritage were

briefly highlighted to gain certain criteria's on the topic of social factors. The same was done for the economical and political subjects.

The highlighted importance of the existing building stocks where then analyzed upon its necessity and how it generates the idea of change and supports a more conservational approach to the environment.

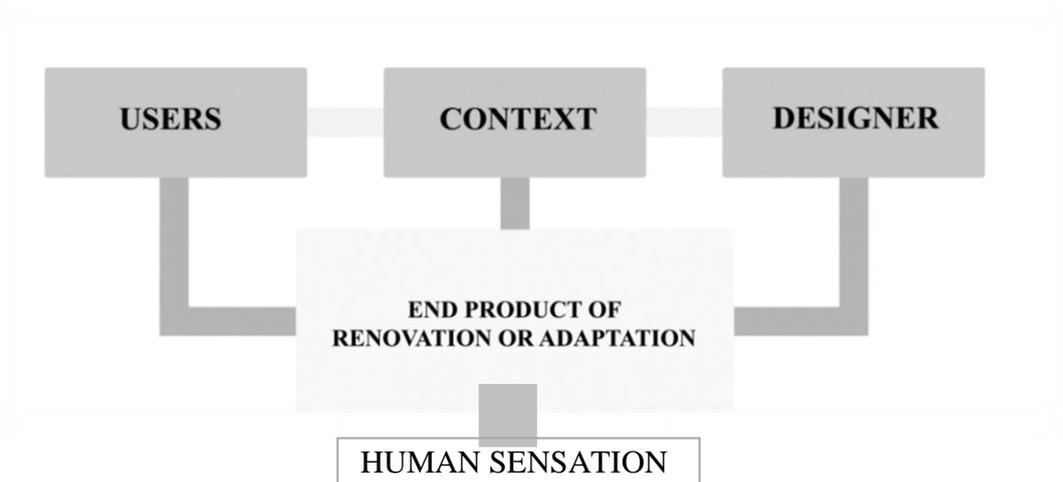
At this point, the argument was formed between change, the designer, and the emotional impacts of change. The argument goes over certain aspects of change, trying to identify the most significant points in which a designer should consider in the initial approach to design, within the context of emotional outcomes, either positive or negative. The argument is based on the awareness of the interior designer's responsibilities in the fulfilment of the emotional needs for spaces.

Certain solutions to, how a designer could achieve the type of knowledge needed in fulfilling the emotional needs and the physical has been discussed. One of the solutions that where mentioned was the idea of consensus design, a method that includes the users of the space within the design process. This type of method could be applied to understand both sides of a renovation or adaptive re-use of spaces, such as the physical properties of the space, and the identification of the individual attachments to the place via the users within the process. To conclude chapter three the addition of a table, (Table: 1) was expressed to show the certain relations that people could have to spaces. Furthermore how we can use certain aspects of the table as guideline to understanding the sensual attachments to spaces.

The scope of the argument brought forward some of the elements that interior designers need to consider when taking on projects such as renovation or adaptive re-use of spaces. The awareness and knowledge of either the designer or the user was noted within the perspective of personal preferences, social aspects, culture, and economics.

The end note of this chapter sums up the importance of interior design in the context of sensual experiences, taking the subjects of renovation and adaptive re-use to significance in the manner that space needs to initially be intact both emotionally and physically. The change factor could be the main aspect in the sensual field therefore the criteria's that govern the end product of a renovation or adaptation, could solely relate to either the users, context and the designer.

Table 3.4: The outcome of the discussions & Arguments



in table 3.3 it illustrates the main discussions and arguments that are mentioned within chapter 3 the argument is based around a the idea of should the designer make use of a socially inclusive approach to a project that concerns the notion of change through adaptive reuse or renovation, the users of the places could be involved

during the process to smoothen out the transition of old to new spaces, the context is another important aspect a designer needs to consider due to reasons that the context of the situated place could hold intangible meaning that is hard to see on the surface of the context, therefore the place in which the design is being done is of importance, and last but not least the designer with their own awareness and knowledge of such concepts needs to be considered to reach a successful result within the transformation from the old spaces to new space.

CONCLUSION

Continues change within environment affects all aspects of life. Change emphasises both the physical and emotional depth within space. The transition between old a new; change could carry with it certain elements of both physical properties and emotional aspects. The main aim of this thesis was to identify the possible affects that change can imply on the sensual context of a space. The challenge of translating the sensual aspects of the old to its new context was the issue that has been researched. Within this study a variety of topics have been brought to light and all the topics were analyzed through the perspective of the relation to human sensations with the aim of drawing out the main factors in how humans experience space.

The main aim of the thesis was to research the most significant factors that could create the physical and emotional responses to changes. The thesis aimed to identify if the sensual dimension within physical space changes along with the adaptive reuse or renovation of places. This has been clarified in two ways. The first being that space was broken down into two factors the physical and emotional and both were examined as to the level of relation between them, secondly scientific knowledge on how humans create certain bonds, values, attachments to spaces were analyzed through literature, suggesting that certain changes bring about a certain magnitude of psychological response, therefore suggesting that changes may impact humans on both the emotional and sensual scale.

Chapter 2 of the thesis had two parts in which formed the scientific knowledge behind what physical space is and its emotional aspects in relation to humans. Space

is a two sided existent plane and is fundamentally bound by physical and emotional aspects. Within the first part of the thesis, the main factors in the physical composition of space were studied. The investigation of space pointed out the fundamental elements of natural and manmade environments identify the basic Factors within space.

The basic understanding of space and what it could mean to humans were discussed; whereas the second part highlighted the understanding of the emotional aspects that are inherited within space. This part analyzed the relationship of space and humans, forming the essential idea of place and the formation of place. The two subjects were broken down to their basic understanding, therefore allowing it to be looked at within a more simplistic manner. The meaning of space to humans is the starting point of emotional and sensual ties to place. Therefore by understanding the physical aspects of space and the human need for a place, gave relevance to how humans develop their emotional ties to places.

The essential meaning that chapter two holds is that space has two sides to it the physical side and emotional side, creating a double sided and continuously changing notion that provides us with sensual experiences. The significant findings within this chapter support the more complex ideas that are explained within 'change'.

Humans gain sensual feelings through our perception of space. Perception is one of the main factors that affect our sensual system; the sensory motors within our bodies perceive and interpret our surroundings creating the sensual experience. Our five sensory systems were explained in their scientific terms and definitions which was an essential part that needed to be mentioned. Due to the fact that we have already

explained how humans develop their emotional side to places; but how we actually perceive and how senses are interpreted were not discussed. Therefore the sensory systems were one of the essential means in the understanding of how we perceive and what types of sensory systems respond to certain aspects of physical space.

In highlighting the important aspects of the interior design profession, we can identify the main mission of an interior designer, its responsibilities, value, relevance, and identity. It could be clearly noted that interior designers are the ones that fuel a space with emotion and atmosphere. This could be done by the use of physical properties within spaces such as objects lighting fixtures, colours, and so on. A carefully thought out design on the physical space could create the essence or the atmosphere. The consideration of the emotional or atmospheric character the space allegedly creates; meaning the context of it all should be of important note. As well as identifying the meaning of a space. This could be through the exploitation of social factors, economical factors, political, and not to forget the actual users of the space.

In general, all topics are discussed under the perspective of sensuality and the experience of place; 'change' being one of the most important in the clarification of the conservation of emotions within space, that creates a whole different outlook on the subjects such as renovation and adaptive re-use; and the human senses due to the reason that environments naturally evolve through time it employs change, but through this change it also reflects on the emotional status of humans and their sensations. Without change, the environment will be static raising the issues of the fulfilment of both physical and emotional aspects. Therefore change is regarded as a sufficient tool to further our physical and psychological development.

So how does this all come together? Table: 3.4, shows the whole scope of the ideas and topics that where to be research. In this table we could understand how all the topics are related to each other and how one cannot function without the other.

Change factor in many issues within the sensual and physical aspects of interior design profession, the renovation or adaptive reuse of buildings creates the change within both the emotional context and the physical context. Therefore when taking this into consideration for an interior designer could take into account the scientific information about space and place and human development of feelings for a place, to gain sufficient results in the outcome of a renovation or adaptive re-use design. Socially inclusive method is only one way we could see ‘both’ sides of a place. Individual awareness plays a role within the thought of conserving sensual aspects of space, this could reflect on both the designer and the users of the space.

This study emphasises the constraints that need to be cared about within the idea that change brings major implications both physical and emotional. The study aims to shed light on issues that could occur during the renovation or adaptive re-use of a space. The study does not aim to provide a guideline type conclusion for researchers/designers to follow. However it aims to create a knowledge base and tries to give the subject matter a sense of importance subsequently creating awareness within the field of interior design and the affects of change. Furthermore a guideline approach to a subjective matter could create issues since the sensual aspects are of intangible material.

Future recommendation

This thesis could serve an interior designer or researcher as a reference for further studies. In Addition they could utilize the information present within the thesis as an ingredient within their approach to projects that aim to change a space from old to new in the sensual perspective.

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