The Application Of Formal Aesthetics By Architects And Interior Architects According To Their Own Ranking Performances

Shabnam Pazooki

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

Master of Science
in
Architecture

Eastern Mediterranean University
September 2011
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

_____
Prof. Dr. Elvan Yılmaz
Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Master of Science in Architecture.

_____
Assoc. Prof. Dr. Özgür Dinçyürek
Chair, Department of Architecture

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Science in Architecture.

_____
Prof. Dr. Kutsal Öztürk
Supervisor

Examining Committee
1. Prof. Dr. Kutsal Öztürk   _____

2. Assoc. Prof. Dr. Yonça Hüral   _____

3. Asst. Prof. Dr. Nazife Özay   _____

ABSTRACT

A prominent architect stipulated that humans experience the world in two basically in logical and aesthetic manner. The Aesthetics is the philosophical study of art and natural beauty and an aesthetic indicates normally to the feelings of pleasure or displeasure that comes from visual or aural artefact. (Korsmeyer, 2004)As such, aesthetics is visually dependent on things, which can be either significant or insignificant. Aesthetics is merely any current standard of beauty.

This thesis first introduces the idea of aesthetics and outlines the different formal aesthetic elements. The first chapter will state the purpose of the study, outline the problem statement and then the methodology, which will be used to analyse the matter. The aim of this research is to get the most remarkable element of formal aesthetic (form, colour, light, texture) by creation a list of aesthetic elements and collecting the opinions of architects and interior architects regarding their preferences as to the degree of relevance and applicability of each element in the design of either a house or a restaurant. This work will attempt to distinguish the best classification by either the architect or interior architect in selecting a list of preferences when designing a house or a restaurant. And this research shows the correlation between architects and interior architects.

The second chapter gives a concise explanation of the terms "aesthetics" and "beauty". A brief history about the origin and evolution of these terms will also be discussed.

Chapter three will explain in detail the different design and aesthetic principles (scale, balance, proportion, unity, contrast, character, rhythm) while chapter four gives a detailed description of the five formal aesthetic elements (form, colour, light, texture, shadow).

Chapter five analyse the different preferences made by both the architect and interior architect when making decisions on what design element they prioritize when designing a house or a restaurant. The total number of architects that completed the questionnaire is 80 divided equally into two groups of 40 architects and 40 interior architects. The reason that there are 40 architects in each group is that the number of architects in the two groups had to be identical in order to make statistical correlation possible. Furthermore, the reason that the number of architects in groups is limited by 40, is that it was not possible to find more than 40 interior architects to take part in the project.

The questionnaire seeks to determine the priority of five formal aesthetic (form, colour, texture, light and shadow) according to architects and interior architects. The importance of the formal aesthetics in two different subjects of house and restaurant are going to be prioritized according to the architects and interior architects that took part in this project. The subjects (house and restaurant) were chosen due to the fact that these subjects attract more attention from the interior architecture point of view than other subjects do in North Cyprus.

 The degree of correlation and significant considerations taken by both architects and interior architects when considering the design of either a house or a restaurant will be analysed. When a house is chosen as the subject in question, the architect and interior architects share some views when it comes to colour and form. Both elements have an 89.8% and 97.8% positive correlation. Also there is a very strong correlation of 99.14% for both architects and interior architects to regard shadow as the element of least preference. Light and texture portray very weak correlations of 26.7% and 5.9% respectively in the rank of importance for designing a house. And also when a restaurant is the subject, both the architect and the interior architect look upon the form, lighting and texture in a like manner. These high correlation coefficients of 91.9%, 87.8% and 83.2% show strong correlation in the reasoning for both of them. There also is a 99.5% that shadow is last choice for both of them. Colour is only weakly correlated with a 55.2% coefficient of correlation on the ranking of this element. From the information derived from the data collected, it shows that architects and interior architects think alike in most situations when considering the design of a restaurant.

 After analysing the data we will therefore draw inference on how these preferences are ranked, in chapter six is conclusion about correlation between architects and interior architects we will end by making a few recommendations in which other interested researchers can focus.

Keywords: Aesthetic, beauty, Formal aesthetic, Interior architecture, Design elements, correlation.

ÖZ

Konu ve estetik ile ilgili genel bilgiler verildikten sonra birinci bölümde amaca bağlı promlem kurgusu ve meteoloji açıklanmıştır.İkinci bölümde estetik ve güzellik tartışılmıştır.Üçüncü ve dördüncü bölümde formal estetik temel ögeleri forum renk doku aydınlatma.Gölge uzerinde örneklerle durularak ,Tasarım formal estetik prensipleri :ölçek denge oran propersiyon birlik karakter ritim açıklanmıştır.Beşinci bölümde alan çalışmalası açıklanmıştır.Mimar ve iç mimarların ev ve restauorant tasarımlarında formal estetik öğelerinden hangisi ne öncelikle verdikleri araştırılmıştır.Hazırlanan tercih listesinde 40 iç mimar ve 40 mimarla anket yapılmıştır.Tercihler arasında korelesyon olup olmadıgı araştırılmış.

Yapılan değerlenme sonucunda ev tasarımlarında´form tercihlerini yüksek karelasyon %97,8 renk tercihi yüksek karelasyon %89,8 verilmiştir.

Gölge de karelasyon bulunmamıştır, aydınlatma ve doku ise zayıf karelasyon %26,7.

Restaurant tasarım aışk ise bıcım %91,9 aydınlatma %87,8 ve doku %83,2 yüksek karelasyon verilmiştir renk ıse zayıf karelasyon vermıstır %55,2 .

Bu veriler göz önüne alındiğinde mimar ve iç mimarların formal estetik öncelik tercihleri diğer bina türleri ıçinde araştırma yapılabilir.

Anhtlar kelemiler: Estetik, güzellik, formal estetik, İç mimari, tasarım öğeleri, korelasyon.

To my family

who always support me

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

Chapter 1

INTRODUCTION

Aesthetics is theoretical name of art and also beauty experiences the suitable method of understanding 'art' and 'beauty'. Furthermore it is a comparative way of philosophical knowledge. (Hasse, 2004)

> "Aesthetics is correlated to the notion of 'aesthetic experience'. Baumgarten; coined the term aesthetics and he said individuals experience the world in two ways 1.logical and 2. Aesthetical". (Miller, 2004)

Aesthetics as signified 'æsthetics' or 'esthetics' is defined as the study of sensory emotional feelings. On the other hand named 'taste' and 'judgment' of human feelings. (med library, 2011)

Aesthetic never emerges in negotiations or design documents. The aesthetic is related to pleasure or displeasure feelings it can be visual or aural. (Steinberger, 1993)

Integrity is the important feature of aesthetic and it means that every thing should be hanged together. The critical aspect of any design is the choices the designer makes, when faced with a mass of possible content, of what to place inside the frame and what to exclude. The choices of designer or architect are very important and they have to

know what is better to put in side the design or remove from that to achieve remarkable integrity and harmony. (Steinberger, 1993)

Texture is the other formal aesthetic element. It has a powerful effect when we usually look at the space. And also it has an important role on the visual scale of the space it means it can make a room to look very small and dark or large and light. So this is the art of designer to choose the best one for each space (Lewitin, 2002-2006)

As an integral part of interior design and decorating, colour helps to distinguish exterior materials and accent shapes. When colour is perfectly used in architecture, it provides a magnificent effect on any structure. Colour is described by the term hue, value, and intensity. (Jefferis & Madsen, 1986)

In an attempt for give a concise definition to the word "light", we infer to the direct opposite term "darkness". Light as we know must originate directly or indirectly from some luminous or shiny surface. Self-luminous sources exist such as burning coal, some metals, phosphorescent substances at low temperatures, flames of different kinds, glow-worm and many insects, the electric light just to name a few. Besides we know that the existence of different planets is only known to us by the light they emit. (R.Potter, 1856).

Followings are the different kinds of Aesthetic:

- Form and shape

- Colour

- Texture

- Light & shadow

1.1 Problem Statement

This research focuses on the architects and interior architect's classifications in terms of formal aesthetics elements, which are forms, colour, texture, light and shadows depending on whether they are designing a house or a restaurant, The importance of the formal aesthetics in two different subjects of house and restaurant are going to be prioritized according to the architects and interior architects that took part in this project. The subjects (house and restaurant) were chosen due to the fact that these subjects attract more attention from the interior architecture point of view than other subjects do in North Cyprus.

1. How architects and interior architects are applying formal aesthetic according to the classification performances in order to get a good design? (They focus on using a formal classification by order of importance of the elements with regard to the formal aesthetics)

2. Is there any correlation or sharp demarcation between architects and interior architects opinion in their preferences for designing a house or a restaurant?

1.2 Purpose

This thesis aims to emit more light on the choice and blend of these aesthetical elements as applicable to excellent designing as emphasized by architects and interior architects. Architects, interior designers and professionals today have the obligation to show the impact of aesthetical elements, particularly in the presentation of the formal aesthetics portrayed by these elements to enhance the embodiment of any excellent piece of work. In addition it is significant to comprehend the precise meaning and relevant application of the various elements to aesthetics, and how to forge perfect blend in design process of either a house or a restaurant.

The aim of this research is to get the most remarkable element of formal aesthetic (form, colour, light, texture) by creation of a list from aesthetic elements and collecting the opinions of architects and interior architects regarding their preferences as to the degree of relevance and applicability of each element in the design of either a house or a restaurant. This work will attempt to distinguish the best classification by either the architect or interior architect in selecting a list of preferences when constructing a house or a restaurant. And this research shows the correlation between architects and interior architects. This will aid to provide an understanding of the preferences that both architects and interior architects take into account when designing a house or a restaurant.

1.3 Methodology

To attain the prime objectives of this work, data on the various preferences from both architects and interior architects will be collected by means of a questionnaire. Theses questionnaire asks the architects to clarify whether they are an architect or interior architect. The total number of architects that fulfilled the questionnaire is 80 divided equally into two groups of 40 architects and 40 interior architects. The reason that there are 40 architects in each group is that the number of architects in the two groups had to be identical in order to make statistical correlation possible. Furthermore, the reason that the number of architects in groups is limited by 40, is that it was not possible to find more than 40 interior architects to take part in the project.

To analyze which elements are of priority when making a decision on the design of either a house or a restaurant, the degree of relevance of the given preferences will be ranked on a scale from one to five. A vivid and concise analysis will be made to see which aesthetic element ranks high considering the subject in question whether a house or a restaurant. The use of both statistical tools and computer software such as SPSS and excel will then be used to analyze these preferences and thus provide a basis for guided selections of these elements and the degree of correlation to a given piece of work.

1.4 Implications of Research

The empirical work done to affirm the degree of importance of these aesthetic elements will act as a benchmark in making future decisions as to the degree of importance and

application of these elements in any practical work. The results of this research may act

as a guide to architects and interior architects in expediting their regular designs.

Chapter 2

Introduction to Aesthetic and Beauty

It is necessity has been admitted that there is neither an contract on philosophical questions nor is there regarding matters on taste. Many people find this a major distinction in approaching the subject matter of aesthetics. (Holtage, 1992)

Some aestheticians view beauty as the appreciation of pure sensory experiences. Form, colours, texture, etc. are appreciated for their own sake rather than for what they represent. Jackson (1967), in fact sees this tendency to focus on the sensory aspects of the environment as an important dimension of personality. Thus, a keen person is one who "notice smells, sounds, sights, tastes, and the way things feel; remember this sensation and believes that they are an important part of life" (Miller & K. Schmitt, 1940).

"The knowledge of the aesthetic is that we distinguish something is attractive and beautiful because when human see that or think about that they have special feeling. This is the meaning of pleasure". (Holtage, 1992)

Breadsley (1958) points out four recognized types to the world of aesthetic experience:

First of them is the attention of the object that controls the experience. The second one is a property of concentration of experience. There is no sense of pain. The sense of pleasure is not equal to that of regular needs. Third one is unity and logical orders. Last one is that experience appears as a whole in itself and it means that it is complete. (Holgate 1992)

The basic objects and material properties such as shadow, texture, colour, light can be understood as a larger aesthetical item. The trick of determining aesthetic is viewer's individual thought and feeling, and also by trying to recognize an aesthetic experience. Beauty also can be understood since it provides increase to the aesthetic experience. (Holgate 1992)

Although psychology has traditionally underlined the study of obvious behaviour, we converge yet to the consensus that environmental physiologists (for example Leff, 1978) argued that the experimental nature of the human being should not be ignored. We think, feel; imagine, dream etc. and these are important in defining basic characteristics of what humans are. In fact one of the goals of the psychology of design should be to increase the quality of human experience. Designer can certainly contribute toward this dignified goal by helping people to create and to appreciate beauty in the interior environment. (miller & schlitt, 1985)

To add, aesthetic is the part of philosophy, with the perception and theory of beauty and the psychological responses to it. (Scharm, 2011). Why and how objects are perceived as aesthetically pleasing is a purely subjective matter. To date, many standards for beauty or aesthetic exist. (Bullard, 2006)

Aesthetic judgment is also influenced by what the environment represent to us. In other words, the emotional associations that are called-up by certain design elements and arrangements can be a rich source of aesthetic pleasure. Form, colour, materials, shape lightings and special configuration (Cf. Lang, 1982) all have symbolic meaning. These meanings may have a historical allusion to an individual or may represent the shared associations of a cultural group. As such some aspects of the designed environment come to have value and beauty for us. Thus, designer must find some way of dealing with both individual and group differences in aesthetic meanings or risk the potential rejection of our design. (miller & schlitt, 1985)

However, the aesthetic environment may not function properly unless individual client definitions of beauty are taken into account by designers. Aesthetic was defined by each individual and not by anything approaching a norm. (Becker & coniglio, 1975)

2.1 Brief History

Baumgarten stated that persons practice the world in two basically ways1.logical and 2.aesthetical. (Miller E. , 2004)

1.Logically: that is a prickle; it make injured if it pricks

2.Appealingly: looking at sunshine or seashell, loving an aspect of art. Other things like these are attractive and lovely because human are observing them aesthetically. (Miller E. , 2004)

Following Baumgarten, the British think on the impression of suitable taste as kind of sophisticated feeling accessible to anybody who would accept the detached, disinterested aesthetic opinion. (Miller E. , 2004)

As Stamatiadis (2009) noted, the classification of aesthetic design like one seems clear. It means a designer can provide facilitative environment for their customers. Nevertheless, some of the designers hope to go more than that. It can be advocated that all the people, whether or not a sensorial sensibility people, should have a chance to attract the satisfaction in the mood of experience (Stamatiadis, 2009)

Plato discovered two important features of imitation, 1.nature of imitation.2. worse results of imitation. (Miller E. , 2004) Plotinus and also Plato believed that the practice of beauty is not an aesthetic experience but it is logical. The most significant results of h these philosophies of beauty was the creation of observation as an essential impression in the theory of beauty and aesthetical experiences. (Capon, 1992)

The philosopher Shaftesbury thought human might like items for their selves such as tasty drinks, a lovely sunny day or amazing portrait. Determining what people should

like and appreciate like this is a nature of feeling. Human can't learn these things from documents or book this is related to our personal feeling. (Miller E. , 2004)

Francis Hutcheson in Dublin wrote one of the first essays on aesthetic in 1725, and it was entitled "An investigation into the origin of human thoughts of beauty and benefit".(Scharm, 2011).

2.2 Beauty

The definition of beauty by Aquinas is "that which pleases when seen". There was a Greek term Pankalia that referred to a belief commonly held that all things, all being, could be seen as beautiful. Plotinus had equated beauty and being in many passages, for instance "a being is described because it is identical with beauty, and beauty is loved because it is being. (capon, 1992)

Philosopher Aquinas mentioned that the beauty is not an inexperienced one; he describes beautifull as that which satisfies when human see objects. These objects satisfy and seem beauty when they have the elements of beauty; such as excellence, proportion and brilliance or clarity. (Miller E. , 2004)

One of the most prominent features of beauty is its indefinability. Human can recognize it when they experience something seems beautiful for them. Though it is very hard to define these observations exactly to other people. There is a main dissimilarity regarding the nature of aesthetic and beauty. The ambiguity of beauty is understood by architects

who attempt to discover a method for their design with the aim of making it. The general knowledge of beauty is not valid because of the mental relations and moral standards affect it. (Holgate 1992)
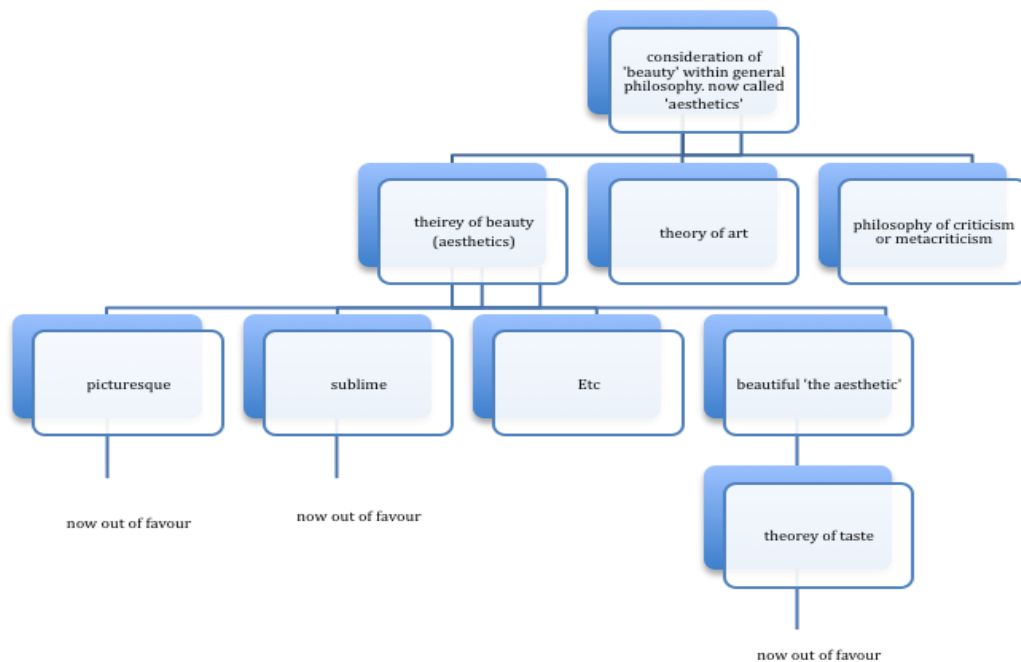
Figure 1: Development of the concept of beauty (Dickie , 1971)

Dickie (1971) write down that the world 'aesthetics' may be used for all theoretical argument of 'beauty' in its broadest feeling from the ancient Greeks to the 18th century, while beauty in its modern imperfect feeling was not preserved as a topic in its own right in that time. Renewed effort in the 20th century has commanded to a criticism philosophy, which may demonstrate to be a challenge for the philosophy of aesthetic experience. (Figure1) Dickie. 1971). (Holtage, 1992)

And also Aristotle said that the meaning is intermediate between excess and defect (so that often we say of a good work of art that it is not possible to take away or add anything)" Ross D. (1980) p: 179 in addition he said beauty and strength were seen in terms of "the blending of elements in due proportion" (Capon, 1992, p. 51)

Hutcheson wrote down the realm of aesthetics should be distinguished from the realm of utility and knowledge. The capability to observe beauty may properly be named as sense because the pleasure it creates does not rise from any knowledge of principles, proportion, cases or of the effectiveness of the thing. (Capon, 1992, p. 43)

Disinterestedness: Observers are uninterested to the actual reality of the item. The judgment of beauty is independent of the interest in reality. Interest in the item is a subordinate and different kind of judgment. (Miller E. , 2004)

Figure 2: Disinterestedness

Young (2005) noted; it is usually accepted that aesthetic knowledge should contain 'pleasure' but for philosophers, urge appeared againto experience and decrease specific kind of emotion. And concentration should be nearly focused in objects, arise from the decreased consciousness if in essential factors. Should not be any emotions like pride, jealousy, or desire include, some people who are disinterested. The sensual enjoyment of distinguishing primary colours, shapes, is considered to be a lower command than mental pleasure to supply approach. (Young, 2005)

As Charlton (1970) mentioned in his works, it is difficult to begin an argument of aesthetic with a pure explanation of what it is because that very question is one of the main topics of discussion. Also Alan Holgate 1992 promulgated that one of the most important characteristics of beauty is its ambiguous nature. People generally possess a robust personal sensation. People can identify beauty with certainty when they read or see anything beautiful. But it is too hard to define and explain these feelings. There is an important aspect relating to the nature of beauty. Theorists and aestheticians considered these problems in order to attain a clear idea of their characters. Designers accomplish the importance of beauty, as well, they try to find a method for it or enter to a project with the certain idea of designing. (Holgate 1992)

However, the aesthetic environment may not function properly unless designers take individual clients definitions of beauty into account. Aesthetic was defined by each individual and not by anything approaching a norm. (Becker & coniglio, 1975)

As difficult as it is to precisely on a clear definition of aesthetics, to disintegrate it from beauty is also innately difficult. As the various proponents and great philosophers have defined these two concepts over the years, the attributes inherent in them are purely subjective and based on personal judgment. In this work, we will attempt to provide a vivid explanation and blend on the work of both architects and interior architects. We will explore how they incorporate formal aesthetics into modern architectural design, and to apply the attributes of formal aesthetics i.e. form, colour, texture, light and shadow to enhance performance and portray beauty. Finally we will draw inference from how they make decisions and incorporate the above-mentioned attributes in their work.

Chapter 3

DESIGN PRINCIPLE OF FORMAL AESTHETIC

A multitude of design principles are usually methodically merged to produce a conspicuous design that creates value. This chapter will concentrate on analyzing these different elements and their combined effect on an architectural design.

The difficulties in knowing the extremely complex nature of aesthetic answer has led lots to think of it as being extremely exceeding analysis. The methodical type of aesthetic reply in visual domain stems from the primary common features and principles upon which it is founded. The perception and construction of any object involves clear design elements. It also relates to specific principles such as balance, rhythm, contrast, unity, scale etc. Design elements are the parts that make up an object. Design principles are essentially general rules of perception that involve the relationships between the parts of a visual display. (Veryzer, 1993)

The elements and principles of design are the tools an artist uses to communicate feelings and ideas visually. They are appropriate to all of the visual arts irrespective of whether the artist is a painter, sculptor, architect, choreographer or using a computer. (university, Western illinois, 2011)

An suggestion of the role that design principles may play in the creation of aesthetic is specified by Lewicki (1986). In his work he tested people's feeling to violations of instinctively educated compatible design elements. It was understood that although people cannot articulate even the simplest proportions of the human face, they are too sensitive to little proportions violations. (Veryzer, 1993)

Architecture has the same basic principles, which are common to painting, sculpture, music. These mainly deal with unity and synchronicity, balance, rhythm, and composition. To be appealing, these principles are often organized around the central plot similar to those of a novel. It has design, as a masterpiece. It can be rhythmic as the dance. Painting has contrast of colour, and a fine piece of sculpture has beauty of form and line. Good architecture is pleasing in composition through the relation of contrasting masses and tone. (Salyan & Thapa, 2000)

Formal Aesthetic Principles

Design elements such as form, colour ,light and shadow do not exist in segregation on a building. These elements joined to make a good design in architecture for making some harmony, balance, unity, proportion and contrast. Also it is essential that the several elements used for a design blend together good so the building seems unified. As we vividly scan any architectural design, our focus is on these elements. (Architeacher, 2002)

The seven basic principles of composition to space enclosing elements:

  ✓ Contrast…………………………………..variety

- ✓ Proportion…………………….………..relationship

- ✓ Scale…………………………………...size, magnitude

- ✓ Balance……………………………………equilibrium

- ✓ Rhythm…………………………………...repetition

- ✓ Unity………………………….…………..harmony

- ✓ Character…………………………………Expressiveness

3.1 Contrast

We can see a building due to contrast in the shapes and textures of the surfaces, which enclose space to make architecture. Not only is it possible for us to see the building through the elements of contrast but also the building is given beauty and interest by the difference between the types of treatment which are introduced. It is essential that certain areas, direction and colours may vary or differ from other. By contrast therefore, the qualities of each are emphasized and glaringly stand out. (Salyan & Thapa, 2000)

Contrast can be vividly defined as extreme differences; a juxtaposition of dissimilar elements (such as colour, tone, or emotion). Contrast exists when two adjacent parts closely located portray a clear difference from one another. In architectural design, with different color, texture, form or even lights and shadows architects can create a contrast and create visual variety to their work. (Architeacher, 2002)

The images below give a vivid insight of how contrast can be clearly viewed. The first two images depict colour and lighting, contrast between black and white and shadow and light. The second image shows form contrast. We can clearly see that apart from the curvi-linear form, the rest of the forms are rectangular.

Figure 3: left, Contrast of tone (Japanese architects, 2011)

Figure 4: contrast right: contrast of form (Japanese architects, 2011)

3.2 Proportion

This is largely a matter of relationship. It is evident by comparison, which the eye makes between the size and tone of objects or part of a composition.

Relations: The most important phases of proportion should be noticed in the development of a façade, is the relation of solids to the voids, of the wall surface to the openings. It is necessary that one clearly dominates the other so that elements of contrast will be present. (Salyan & Thapa, 2000)

If there is a similarity between widths of windows and spaces between, competitions will be evident.

Relative proportion deals with the relationship among the parts of each object and the whole object. An example is shown below. The windows represent the object in the house.
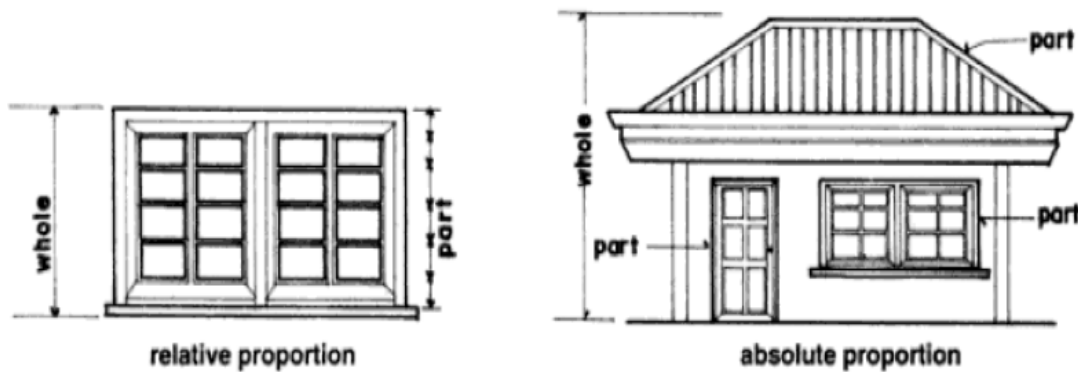
Figure 5 proportion

The world of proportion describes the correlation between two items that they have different sizes with a relationship among them. In each architectural design we search to find proportional relationship between size of the human body and the building. This proportion has effect on human feeling so it is a very important element. So always designer tries to create a comfortable space for the user. Most of time people said scale to this relation or proportion. For example a room of the house may have a much lower ceiling than an auditorium where lots of people go there. Unfortunately sometimes designers design a building without proper scale so a space is purposely out of proportion with respect to human scale. For instance the towering spaces inside churches that make human feel completely insignificant when they compare themselves with the greatness of God. Also designer purposely design or create spaces with changing

proportion by varying height of ceiling and area of rooms. So users move through the building dynamic. (Architeacher, 2002)

Figure 6: proportion, (Architeacher, 2002)

3.3 Scale

Scale has references to proportion, which is good for humans. Scale deals with the relation of architectural motifs, such as door, windows, or mounding, steps to each other and the human figure. Architecture must be adapted to human needs. Doors should be large enough to walk through in comfort but not so gigantic that they required an almost impossible physical effort to close them. Steps should be of such a size to permit essay ascent and descent. (Salyan & Thapa, 2000)

Figure 7 (scale) (Salyan & Thapa, 2000)

Two basic scale types include generic scale and the human scale.

Generic scalerefers to the size of building's elements relative to other forms in its context whose sizes are known. Also, the human scale: The size of a building's elements or space relative to the dimensions and proportions of the human body.

3.4 Balance

Balance is simply a description of equality in its composition. It is the foundation upon which arrangement, harmony and adjustment of weight, tones, values, etc, are developed. Proper balance satisfies the eye with reference to the relative importance of the various part of design. (Salyan & Thapa, 2000)

Figure 8: balance by (Salyan & Thapa, 2000)

Figure 9: Balance. Designed by L.A. based firm XTEN Architecture

Balance element is the relationship among the different area of the structure and an imaginary centre line.Balance may be formal or informal. Formal balance is symmetrical (2 side are similar in mass). Informal balance is asymmetric; in this case, balance can be reached by placing shapes of different scale in various positions around an imaginary centreline. (Jefferis & Madsen, 1986)

Figure 10 : formal balance (stepbrightly, 2011)

Figure 11: Asymmetrical balance

3.5 Rhythm

A building is of usually static and stays indefinitely upon its foundation. But there is a movement of the theme as it travels across the façade of the building. When looking at a building, a vigilant eye periodically pauses to scrutinize some detail before going to some other section of the building of interest. (Salyan & Thapa, 2000)
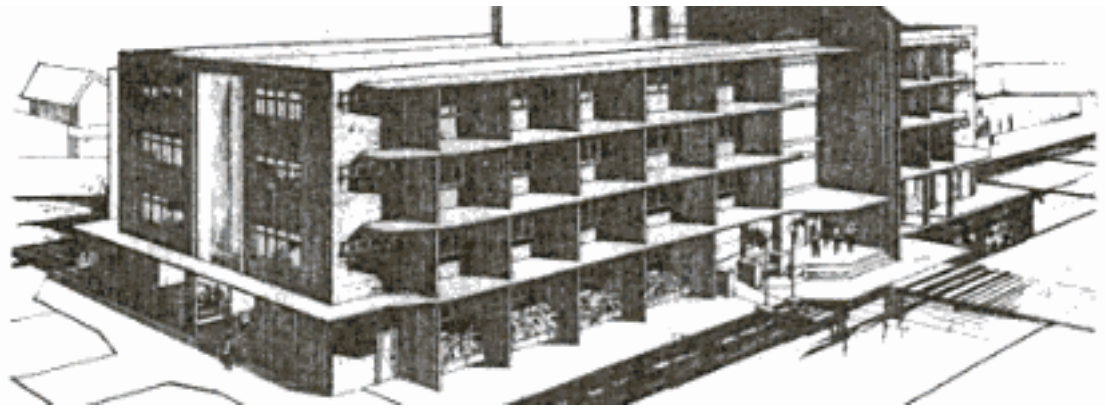
Figure 12 : Rhythm (Jefferis & Madsen, 1986)

Talking about music, people can usually pick up the tonality from the rhythm in music. The drum's beat unconsciously sets the foot tapping when one listens to it. A repetitive element in architectural design provides rhythm and leads the eye through the design from one space to another in an orderly fashion. A slow methodical blend of aesthetic material creates a rhythmic impact on the design. Perfect shape and colour, and precise gradation of materials could make a design impeccable attractive. The material may be rough to smooth in texture and may be in a variety of sizes. This may be large to small and gradation in colour from dark to light. Rhythm can also be created outwardly radiance from a central point. Figure 12, 13 (Jefferis & Madsen, 1986)

Repetitive features lead the eye from form to form.
Courtesy Monier.
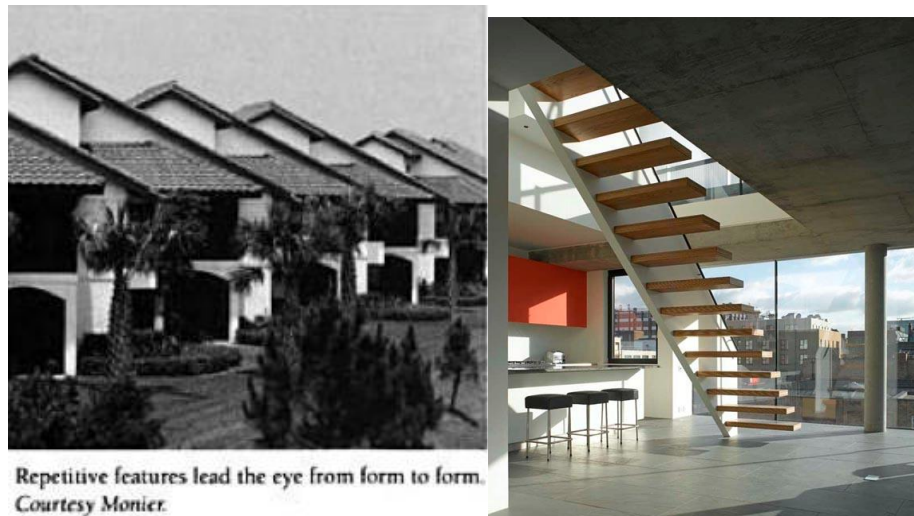
Figure 13: Rhythm (Jefferis & Madsen, 1986), Figure 14(modern houses, 2011)

A careful inspection of buildings usually reveals some specific patterns which portray a sense of rhythm and order in the pattern. These patterns with rhythm give a dynamic value to a design thus seems to radiate life from it. Rhythm is very apparent in rows of arches or in repeating columns. (Architeacher, 2002)

Figure 15: Rhythm in building (flickerphotoclub, 2011)

Figure 16: Rhythm in interior (fabricarchitecturemag, 2011)

3.6 Unity

All the unrelated parts of architectural arrangement are bought into proper relation to each other so that a satisfactory composition is obtained. Unity suggests that there is harmony in the entire design. If unity prevails, all the trivial parts must be kept in their places and be made simply to assist the major units in the roles, which they are to play in the development of the structure. (Salyan & Thapa, 2000)

Repetitive features lead the eye from form to form.
Courtesy Monier.

Figure 17 : Unity by Jefferis, A. Madsen A. D (1986)

Unity relates to proportion, rhythm, and other elements. Unity ties a structure together with a common design or decoration thus incorporating consistency in the entire design. Similar features that related to each other can give a sense of well-being. It is unprofessional to add features to a building that appear to be of no consequence (Jefferis & Madsen, 1986).
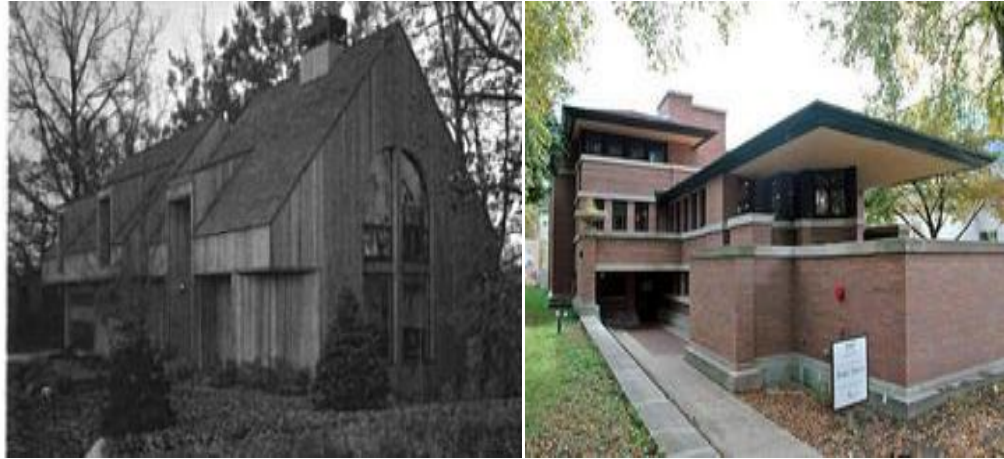
Figure 18,19 Unity(designbuzz, 2011),

Figure 19,21,22 unity (designbuzz, 2011), (The Three Graces: Artistic depiction of graceful unity)

3.7 Character

Although buildings have point of similarity like walls, doors and roofs, they have different purposes and appearances. In any architecture design worthy of the name, the outer walls of a building must express the internal function. The elements of character grow out of the function of the building and the consideration of all the creative principles composition. (Salyan & Thapa, 2000)

The character of a building can be seen from its;

- **Function**: i.e. the use of the building. The most relevant type of character in architecture is that which results from the purpose of the building or the reason for its creation.

- **Association:** influence of traditional types. This comes from the influence of ideas and impressions related to or growing out of past experiences.

- **Personality:** this relates to the human quality or emotional appeal or attachment to the building. The element of personality plays an vital part in the illuminating its character and connection with man and with architecture. (Salyan & Thapa, 2000)

Chapter 4

FORMAL AESTHETIC ELEMENTS

People observe knowledge about art works through their feelings. By watchfully investigating an artwork, human realizes to establish his sensory opinions by classifying them as art elements. (Architeacher, 2002)

Formal aesthetic elements or sensory elements include; (Architeacher, 2002)

✓ Form

✓ Colour

✓ Light and shadow

✓ Texture

The first things that catch human eyes in a building or other design items are elements that appeal straight to the human senses. Form, texture, colour, light and shadow are critical in human analysis of any building of interest. (Architeacher, 2002)

4.1 Form

To focus our attention on the importance of form in architectural design, Edmund Bacon believed that, form of architecture is the point of contact between mass and space. Forms of architecture and colours, textures, inflection of light and shadow, all comes to add a

value to each space. The excellence of the design or architecture will be determined by the skill of the designer in connecting these elements, both in exterior and interior spaces." Edmund N. (Ching, 2007)

Form can be viewed from a three dimensional framework. It can be measured from several perspectives depending on the architect. Some may consider it from top to bottom (i.e. using height as a basis), others from side to side using the breadth as their basis, or from hind to front using depth as their focus. Light and dark also identified form as well. (2011)

We must be open to the fact that form is a term to possess a diversity of senses. It can refer to physical appearances that can be effortlessly predictable such as the image of chair, or the person seated in it. It may also draw allusion to a peculiar way in which something or an element manifests itself like water change the form and be an ice. In art and design, the word often is used to relate to a well defined structure, the manner of display and its coordination with other elements to form either part or the whole of and image in a consistent fashion that makes artistic sense. (Ching, 2007)

Form suggests both internal references and external outlines that unite the entire image. While form often adds a three-dimensional volume in its definition, shape on the other hand relates definitely to the relevant aspect of form that instigates its appearance. Shape

also takes into consideration the pattern or nature of each line, which defines the form. (Ching, 2007)
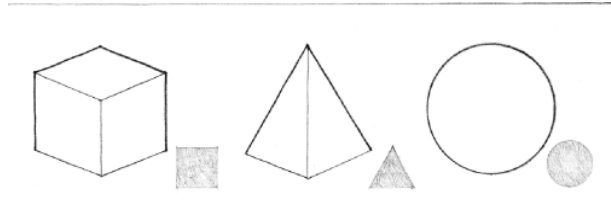
Figure 23: Form. (Ching, 2007)

Shape can therefore be considered as the distinctive outline or surface configuration of a particular form. Shape is the most important aspect by which we identify and classify forms. In addition to shape, forms have visual properties of size, colour and texture, position, and orientation. All these features of form are in reality subject to the way we visualize them. Therefore the following makes us realize the difference in perception of form and its characteristics. (Ching, 2007)

A altering viewpoint presents several form to our eyes. Distance between form and us defines its (form) apparent size. Several conditions of lighting have effect on the form clarity. The visual field surrounding a form influences our ability to read and identify it. (Ching, 2007)

4.1.1 Regular and Irregular Forms

Regular forms mention to those whose segments are correlated to one another in a orderly type. They are generally stable in nature and symmetrical about one or more axes. The geometrical forms such as cube, sphere and pyramid are prime examples of

regular forms. Form can retain its regularity even when transformed dimensionally or by the subtraction of elements. From our experiences with similar forms, we can construct a mental model of the original whole even if there is a missing portion or an addition. (Faravar, 2010)

Irregular forms are asymmetric in nature and do not match with others in a well defined and consistent way. They lack the symmetry property makes them more flexible or dynamic in use than regular forms and can be matched into regular forms. Architecture deals not only with solid masses but also with spatial voids. As such, regular forms can be contained within irregular forms. In a like manner, irregular forms can be enclosed and shaped to become regular forms. (Ching, 2007)

A Regular Composition of Regular Forms:
Coonley Playhouse, Riverside, Illinois, 1912, Frank Lloyd Wright

Irregular Forms:
Philharmonic Hall, Berlin, 1956–63, Hans Scharoun

An Irregular Composition of Regular Forms:
Katsura Imperial Villa, Kyoto, Japan, 17th century
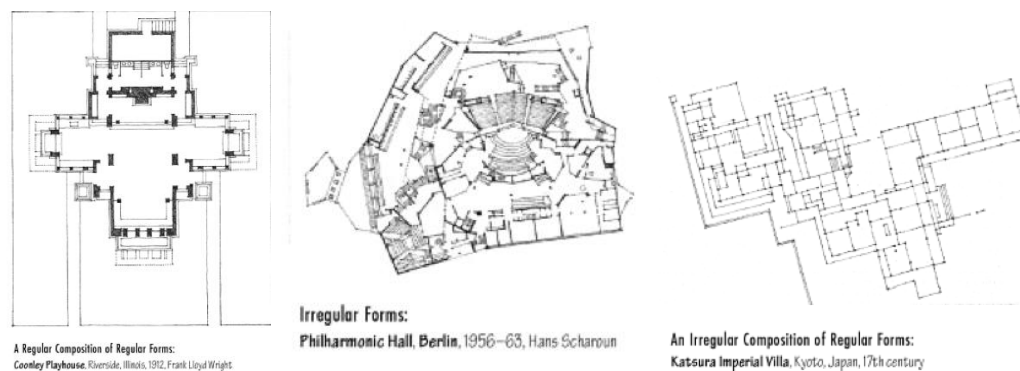
Figure 24, Figure 25, Figure 206: regular and irregular forms by ching (2007)

Figure 27: Cubical and rectangular forms (exinteriordesign, 2011),

Figure 218: Cubical and rectangular forms (modernhousez, 2011)

Figure 29: cylindrical form (2011),

Figure 30: cylindrical form and organization of internal space (2011)

Figure 31: interior irregular form (2011),

Figure 32: right: contemporary irregular design (2011)

4.1.2 Organic and Geometric Form

Also form can be labelled as either organic form or geometrical form. Like snow boulders below are naturally irregularly, and often asymmetrical. (form, shape and space , 2011). An architect, like Frank Lloyd Wright, usually creates of geometrical forms.

Franklin Lloyd Wright structure
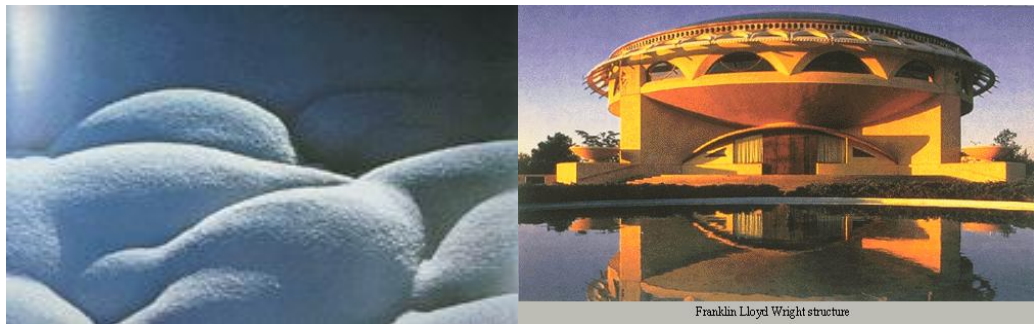
Figure 33: Organic (2011),

Figure 224: Geometric form by Charlotte Jirousek (2011)

However, not all objects that are made are geometric because several designed forms have irregular outlines. While kimono is geometrical in shape, pattern of that designed

organic. Also it should be noted that not all naturally occurring objects are organic. Some examples of these exceptions are snowflakes and soap bubbles. (2011)

Figure 23: kimono (geometric) (2011),

Figure 24: (snow flakes) by Charlotte Jirousek (2011)

4.1.3 Transformation of form

In reality, all other forms are simple transformation of either the shape, size or structure of some original solid, or by some addition of another element to it in order to produce a new object.

4.1.3 Dimensional Transformation

Transforming form by varying some initial sizes but again the new form is the family of that forms. By varying discretely the height, width, or length of a cube, it can be transformed into different forms of prisms. It can be made linear by either compressing it or by stretching it outside. (Ching, 2007)
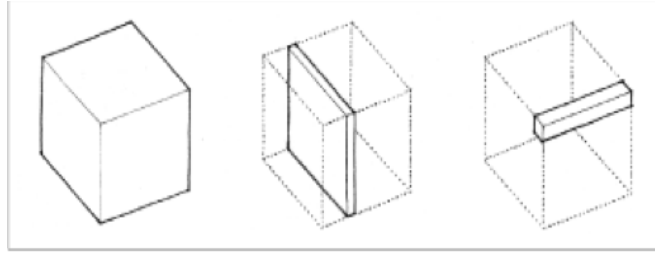
Figure 37 : Dimensional Transformation by (Ching, 2007)

- Subtractive transformation

Form transformation can be done also by reducing or increasing a volume size. Form can be transformed to other family of form or stay with its initial character. For instance A cube, can maintain its initial character even after a part has been extracted or transformed in many reliable polyhedrons. (Ching, 2007)
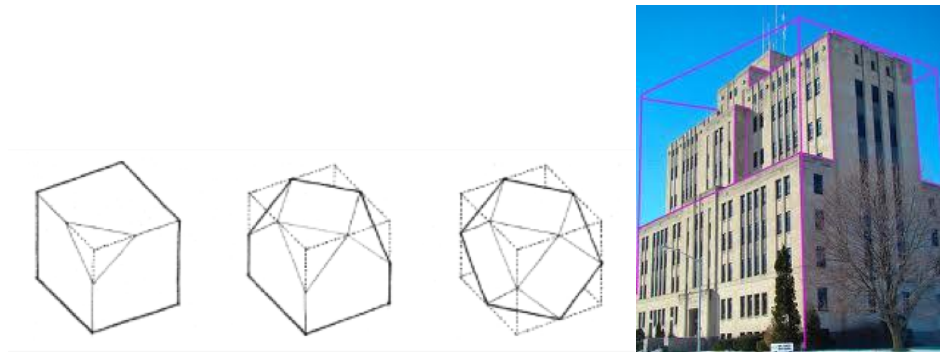
Figure 38: Subtractive transformation, by (Ching, 2007),

Figure 39: Dimensional transformation form (terrableudesign, 2010)

- Additive transformation

Adding elements to the volume of that is another transformation. The type of the additive transformation and the amount and also their size being added determine if the character of the primary form is changed or retained. (Ching, 2007)
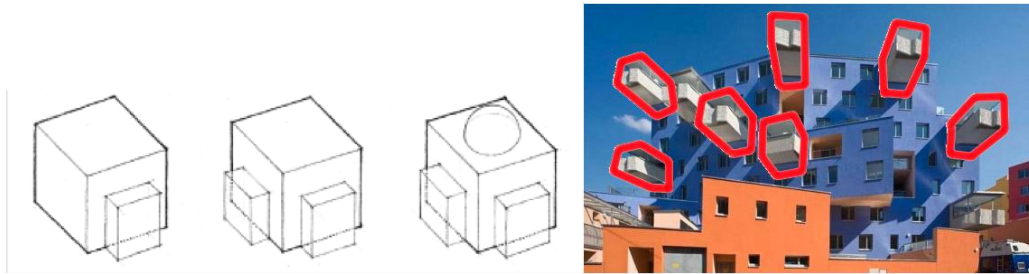
Figure 40: Additive transformation by ching (2007),

Figure 41: Additive transformation (2011)

4.1.4 Form and Function

In almost every circumstance, it is considered as laws of nature that form always precedes function in that, objects whether organic or inorganic are created and expressed in a manner that suits their functions. As such form follows function. (Absolute Astronomy, 2011)

Louis Sullivan is an American architect who said, "form follows function" in, According to him, this idea was phenomenal and refined wisdom. Some consider it an aesthetic creed based on a single rule without exceptions.

When discussing the issue of function, architects are bound to a methodical merge both inherent in the cultural patterns while not forgetting to incorporate the realm of modern technology. Although not all architects are gifted to incorporate their own personal touch in their work, they are blessed with the freedom of self-expression of their own original concepts. (Britannica, 2011)

4.2 Light and Shadow

In an attempt to give a concise definition to the word "light", we infer to the direct opposite term "darkness". Light as we know must originate directly or indirectly from some luminous or shiny surface. Self-luminous sources exist such as burning coal, some metals, phosphorescent substances at low temperatures, flames of different kinds, glow-worm and many insects, the electric light just to name a few. Besides we know that the existence of different planets is only known to us by the light they emit. (Potter, 1856).

Light also occurs naturally as lights come from moon and sun starlight which are the most common sources of light. Due to the need for man for additional light, man has created several light sources as well. (Benya & Karlen, 2004)

As first projected in 1600s by Christian Huygens, the understanding of the origin of visible light can be simply explained by the model cantered on the fact that light rays are diffused as wave fronts through any given medium. Visible light belongs to the larger family of wave-like phenomena called electromagnetic radiation. It is the principal

energy transporting medium through which light is spread universally. (Davidson, 2008).

4.2.1 Brightness Perception

Figure 41 (below) illustrates effect of area surround the item affect on the object brightness. A specific region may appear brighter if surrounds of that are dark. Given colour might looks intense if its complementary colours surround it. (Gorden, 2003)
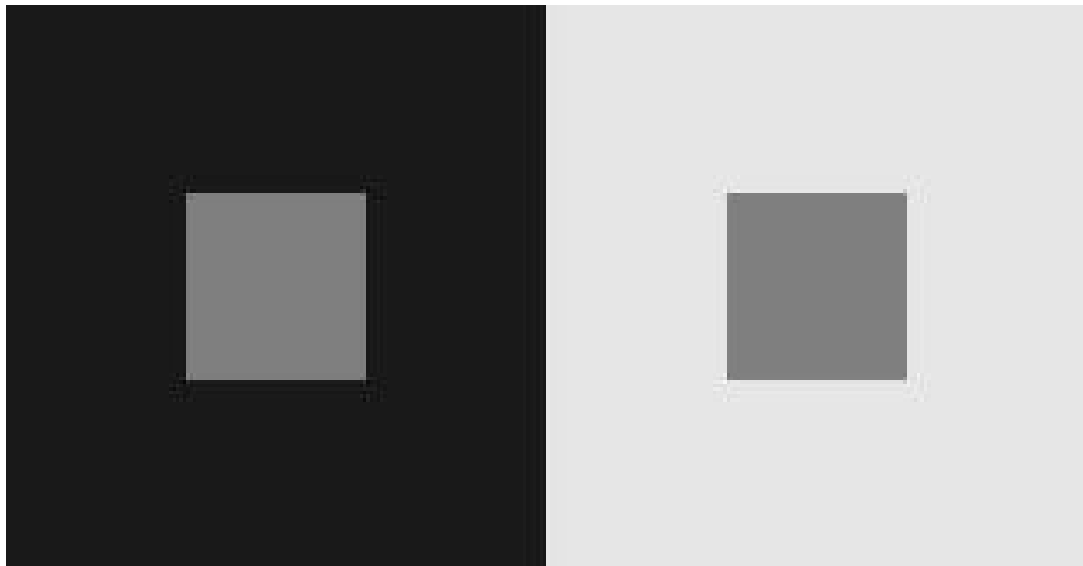
Figure 42: Simultaneous contrast anon (2010) (URL 23)

4.2.3 Lighting Psychology

✓ **Emotional Impact & Mood Lighting**

When lighting is skilfully applied in the architectural environment, it can more than any other element affect the user. As an element of architectural design, light is the element,

which should be used for visual comfort and furthermore achieve a present emotional response from the environment. (Mood Lighting, 2009)

By applying different lighting patterns, fluctuating several lighting, colour in side the lighting or change of the colour of lighted environment it is probable to produce different kinds of moods like happy mood or sadness. Also light has an affect on texture, form so it is a very important elements in designing a restaurant and a house (Mood Lighting, 2009)

The impressions of light on a given space are a function of brightness contrast. The impact of a lit surface, say from the front, compared to another lit from the back transits separate notions about the object. In order to efficiently manoeuvre the impact of lighting in an object to obtain good brightness contrast is a challenge to most creative designer. The distribution of light, if spread equivocally to all surfaces of a room, will automatically destroy any form of contrast that might have existed. Over time the lake of contrast will trigger a feeling of depression and numbness. In the absence of contrast, the environment will appear like a cloudy day. (Gorden, 2003)

The use of light either at higher or lower levels therefore arouses some specific sensations in people. Higher levels of lighting stimulate cheerfulness, alertness and agility.

There is two kinds of lighting: one of them is soft and the other one is hard. In space with soft lighting the light is diffused and darkness and shadows are not very harsh the environment is very relax and there is a little visual compelling space. Diffuse lighting is reduces attraction and make space dull looking. Against of that is hard lighting. It is direct and it makes lots of shadows and high lights the environment.

(Mood Lighting, 2009)

✓ **Degrees of Brightness Contrast**

The degree of contrast affects the performance of task by individuals in an environment. It influences people's attitude at restaurant and house, and impacts the amount of satisfaction and pleasure we experience. (Designing with Light, 2011)

- **Low contrast environment**

When there is no hierarchy and everything is given the same importance with none given more attention than the other element, then a resulting low contrast environment is established. Low contrast spaces are poor emotional stimulants. Since there are usually few stimulants in such places, the spaces are generally behaviourally neutral. (Gorden, 2003)

Figure 43: low contrast, (bluetouch)

With low-contrast lighting, there are few or no shadows and those that exist have soft edges. The entire space is apparently being covered with a non-directional light that seems to emanate from every angle. Diffused lighting almost always is produced by the use of reflectors to diminish and extent the illumination before it is bounced toward your subject. (Busch, 2008)

The primal use of low contrast lighting systems is to facilitate some visual tasks, to allow random circulation, or to permit flexible relocation of work surfaces. (Gorden, 2003)

- **High contrast environment**

A small proportion of diffuse light and large amount of focused light produce a high contrast environment. High contrast lighting systems render patterns of light and shade.

They intentionally create a hierarchy between foreground and background. High contrast spaces augment stimulation as they are intended to stir up specific moods or emotions (figure 2.4). (Gorden, 2003)

Figure 44,Figure 45: high contrast (URL 27)

This kind of lighting can be extremely demanding, because there is no interaction of lights and shadows to add depth to a composition. Only when Krause was convinced that he understood soft lighting did proceed to work with more dramatic applications of light. (Busch, 2008)

In creating focal points a single spotlight on a stage is extreme in manifesting the influence of brightness contrast. A room lighted in this way dominates its occupants. The brightness contrast diverts all their attention and focuses their attention and interest. (Gorden, 2003)

✓ **Subjective Impressions**

Flynn noticed that most of lighting elements are created for performance or doing special job like lighting for kitchen or working with computer. But there is some kinds

of lighting that is designed just for beauty and absorb people without any special function. They may also use it to focus attention, good for and usually affect the subjective impressions of a room or task. (Katerina Maniaa, 2005)

4.24 Light and Dark

The way people perceive light ushers I the concept of light and dark. By employing the concept of light and shadow, architects make visual attention on a space by making a selection of shapes that create profound sensation. Generally, if we consider two objects, we realize that the conspicuous object is easily noticed while the other is relegated to the background as a shadow. A good example is a broad flat space vs. a narrow tunnel opening. The quality of light in a building can be varied using a several different materials. (Architeacher, 2002)

4.2.5 Reflection of Light

When a body or object is incapable of absorbing light or any other type of electromagnetic waves, it bounces or reflects it away from its surface. The incidence wave is the term used to explain the incoming wave while the reflected wave is the wave that is that which leaves after touching the object.

Visible light reflection under a pool is the simplest form of reflection commonly seen. When light rays hit the pool, the pool acts like a marrow and reflects the surrounding object by the pool. If the pool is disturbed by say dropping a stone in it, waves are formed and the reflected light becomes haphazardly dispersed. (Davidson, 2008)

4.2.6 Brightness and Lluminance

"Specifying the direction and distribution of light in a space yields the desired brightness contrast". Brightness is the subjective sensation that occurs in the consciousness of a human observer. Luminance on the other hand is the objective measurement of intensity per unit of a projected area. (Gorden, 2003)

The nature in which light is distributed gives the feature of the luminaire used. Some examples include;

(1) Direct luminaires: This kinds of lighting emit the light to the down direction and it has recessed light including down light. It is good for a restaurant looby and of the houses at the places where the designer want to make it dramatic. (Benya & Karlen, 2004)

(2) Indirect luminaires: These kind of lighting emit the light to the up direction so the ceiling reflect light and spread it into the surface like some suspended lamps. (Benya & Karlen, 2004)

(3) Diffused luminaires: Light from such objects are emitted uniformly in all directions. Floor lamp is an example of that. (Benya & Karlen, 2004)

(4) Direct/ indirect luminaires: These do not emit light sideways but only do so upward and downward. Like floor lamps. They are therefore a combination of both direct and indirect light in one apparatus. (Benya & Karlen, 2004)
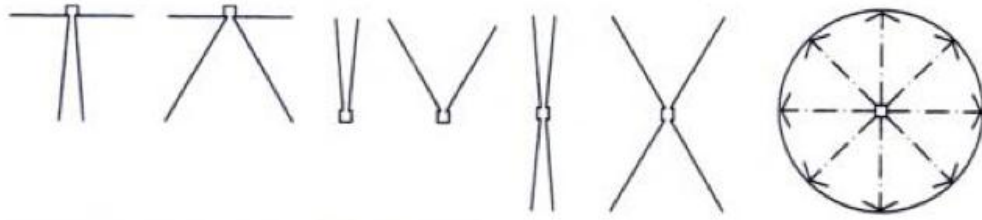
Figure 46: Direction and distribution of light by (Benya & Karlen, 2004)

When a lighting system changes the inherent relationship between highlights and shadows, it adjusts the expected direction of light. A change in the lighting can induce some impression results, which could appear mysterious or absurd. In figure 46 lighting from above makes characters look dignified and noble, from below makes them look sinister and menacing. Lighting from behind gives a mysterious outline. (Gorden, 2003)
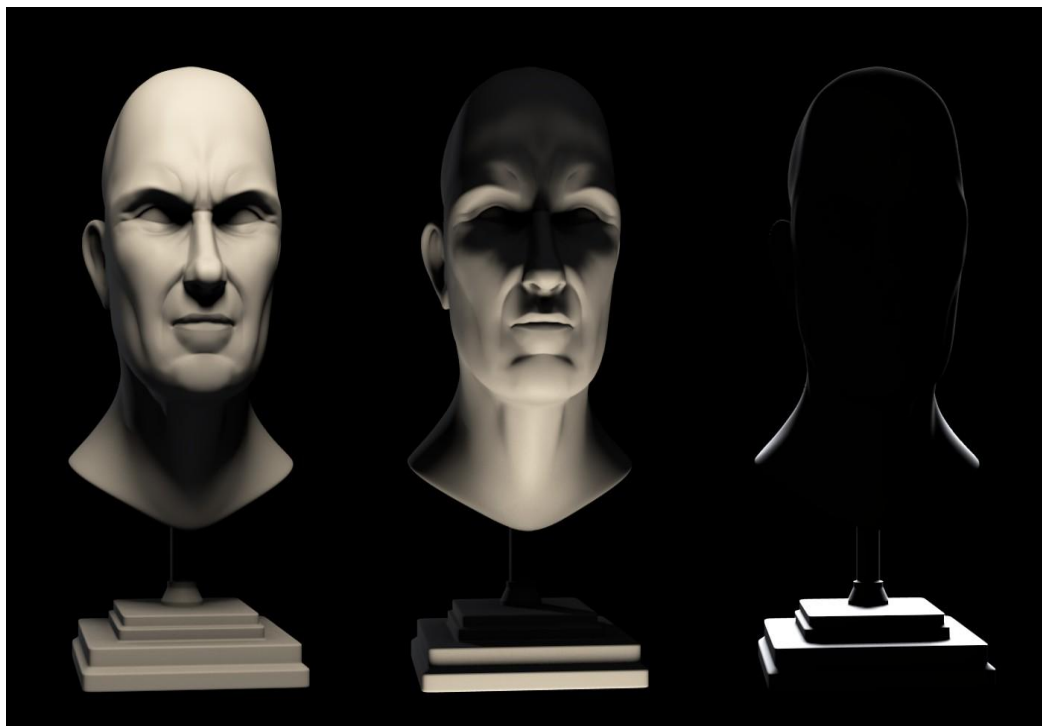
Figure 47: (Simonds), different kinds of lighting on the objects

4.2.7 Decorative lighting

Lighting could be considered and architectural pearl. The style or pattern upon which a building is constructed plays a vital role in architecture. Chandelier, pendants, floor lamp, torcher are kinds of decorative lighting. (Benya & Karlen, 2004)

Close to Ceiling Chandelier

Chandelier
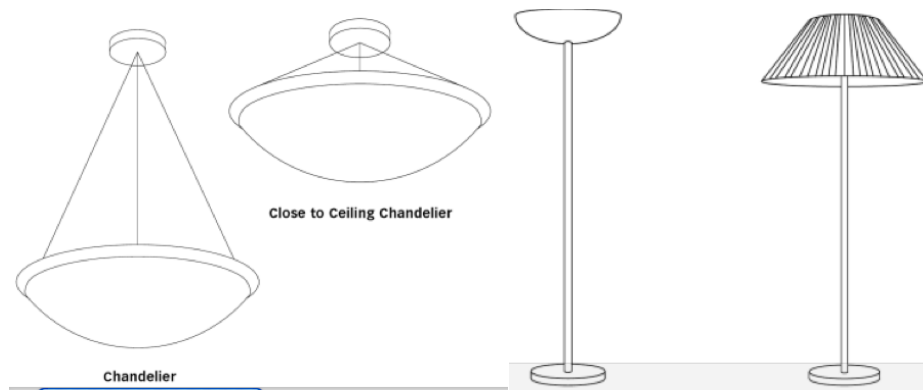
Figure 48, 49: decorative lighting (Benya & Karlen, 2004)

4.2.8 Glare and Sparkle

Too much contrast or luminance is distracting and annoying. Glare which is the term used to describe negative brightness is unpleasing and impairs vision. Glare is often misunderstood as "too much light". In fact, it is light coming into the eye from an extremely wrong direction. If there is extreme luminance within the normal field of view, then it can be termed glare. (Gorden, 2003)
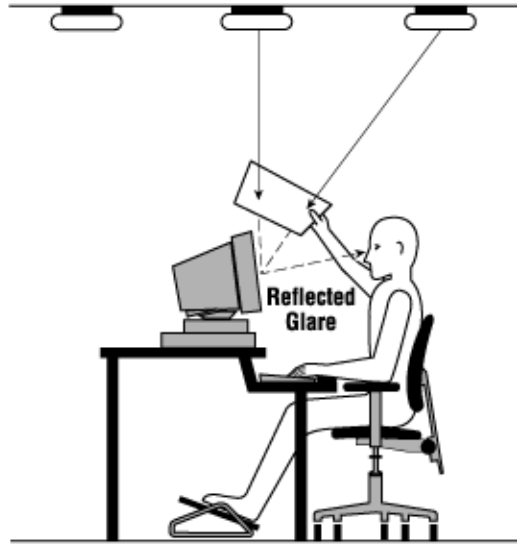
Figure 50: Reflected Glare (Canadian Centre for Occupational Health & Safety, 1997)

Apart from the lighting system, surface finishing, texture, and colours also contribute to the design of any space. As such, all these other factors must be recognized and used in the right manner in order to obtain any good piece of architectural work.

4.3 Colour

As an integral part of interior design and decorating, colour helps to distinguish exterior materials and accent shapes. When colour is perfectly used in architecture, it provides a magnificent effect on any structure. Colour is described by the term hue, value, and intensity. (Jefferis & Madsen, 1986)

Colour will always be one of the most intriguing and contentious features of interior design. The painter and colour theorists Josef Albers noted this. (Grimley & Love, 2007, p. 136)

Generally colour is associated with some mystical expression and that the enigmas of life and death it is perhaps a mistaken notion that man in his love of colour was implied by some aesthetic urge. (Birren, 1989)

Colour is a purely subjective topic because from the past, artists, scientists, architects and designers have always considered colour mixing an intensive area of study. The subjectivity of colour is due to the fact that everyone has their own favourite colour which brings the memory of a certain time, place, or certain emotion. In other to create a successful interior design, a good understanding of colour requires i.e. the interior architect must master the basic features and complexities of colour in a space. (Grimley & Love, 2007)

Colour presents itself as one of the most useful elements of interior design because it can drastically change the environment. Good manipulation and use of colour can for example make a small room appear larger or make a dark room lighter. Interior designers must therefore make perfect colour choices to make their work attractive to the eye. The initial impression of the type of emotion they intend to convey must be taken into consideration. (Karlen & Benya, 2004)

4.3.1 Fundamentals of Colour

Colour is basically formed from the manner in which any given object either absorbs or reflects visible light rays in the colour spectrum. When the human perceives an object as red, it means the eye absorbs all other colours emitted except the colour red which is

being reflected. White is often described as the reflection of all colours, while black is described as the absorption of all colours. We can better perceive colour when light is refracted through a prism. The eye observes colours of different wavelengths as those of a rainbow. The figure below provides a visible clue. (Grimley & Love, 2007)
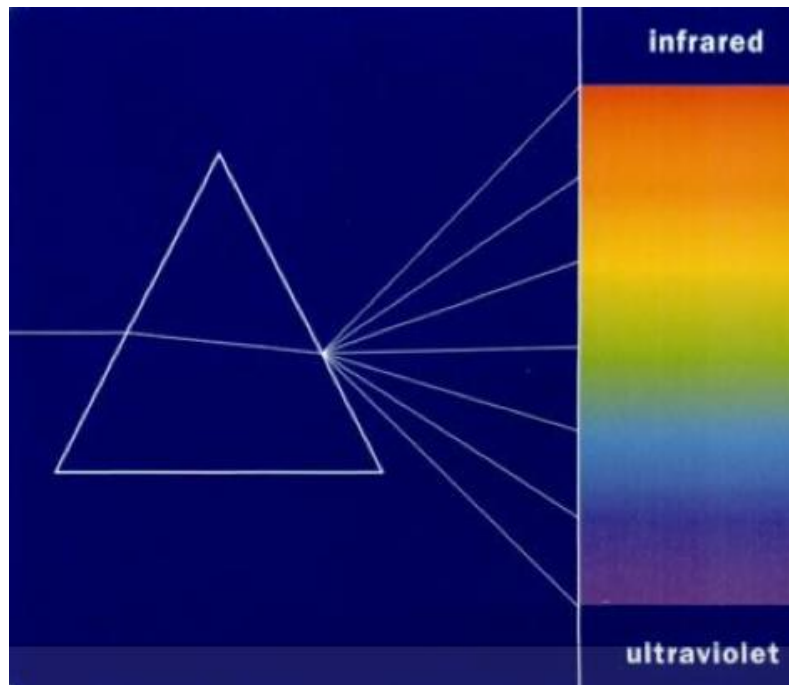
Figure 51 : prism (Grimley & Love, 2007)

4.3.2 Colour Wheel

A perception demonstration of colours is organized according to their chromatic relation under the description of Ford in Itten's book (1998-2009). This chart contains primary colours, secondary colours and tertiary colours. We can create it by putting hues in an proper manner. (Ford, 1998-2009)
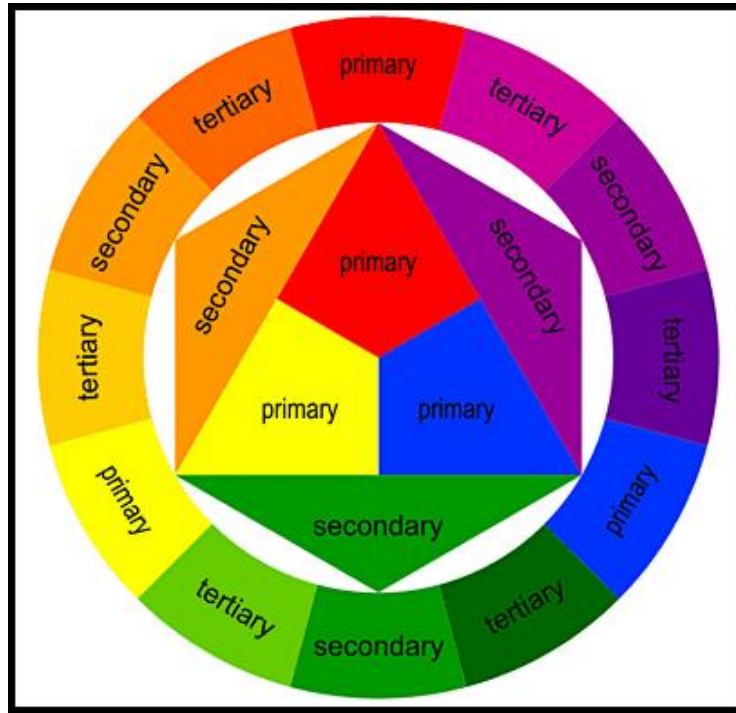
Figure 52 : Primary, secondary and tertiary colour (basic color theory)

- **Primary colours:**

Primary colours are those that are not formed from a mixture of any other colours. Examples include red, yellow, and blue. Mixing, darkening, or lightening primary colours makes all other colours.

- **Secondary colours:**

Secondary colours are those that can be obtain from merging two primary colours. Therefore a blend of red and yellow colour makes orange, red and blue makes violet, blue and yellow makes green.

- **Tertiary colours**

Tertiary colours are obtained from the mixture of primary colours and secondary colours. For example blue and yellow, blue and green, red and violet, blue and violet and others.

Figure 53, Figure 54, Figure 55: Tertiary colours (htt4)

4.3.3 Theories of Colour

Many efforts have been made to establish methodologies to evaluate the advantages of certain colour combinations. Very early on, colour wheels were engaged to visually communication the range of colours, and their relationship to each other. In his Opticks 1706, Newton separated white light into seven colours orange, yellow, green, blue, indigo, violet, and red, arranged on a disk in proportionate slices such that the spinning of the disk would result in the colour white. Newton's objectification of colour into mathematically understandable system allowed for quantifiable experimentation. (Grimley & Love, 2007)

4.3.4 Newton's Hue Circle

In his attempt to develop a theory of colour, Newton was the first to understand that colours did not lie on a linear chart, but rather existed in a continuum. The hue circle is represented by white at the centre (o) and the hues arranged in order around the disk. Each hue is given the system. Newton closed his system through a mix between red and violet that did not appear in his natural primary spectrum. (Grimley & Love, 2007)
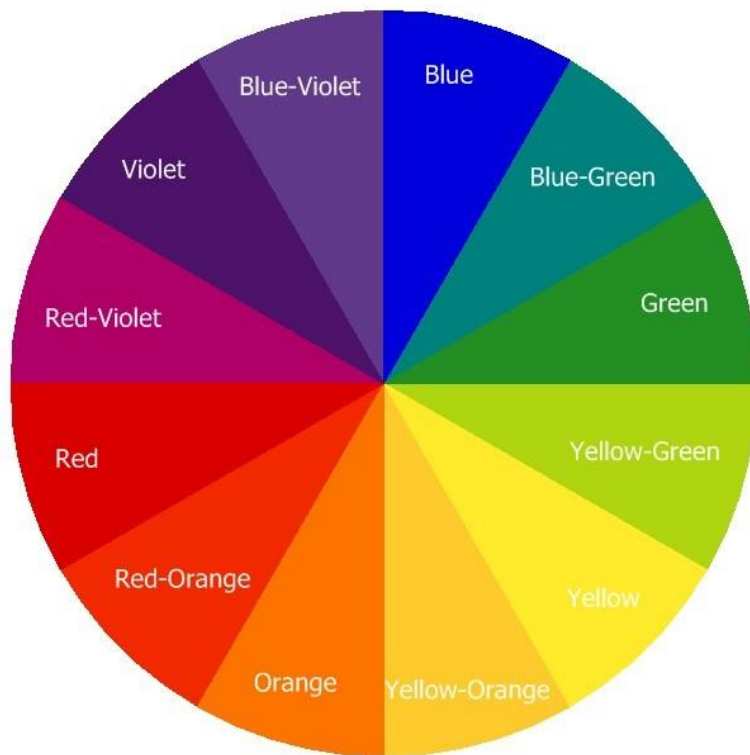
Figure 56: Hue circle, none (Color Wheel, 2009)

4.3.5 Hue, Saturation and Brightness

In the early 1900s, the americium Albert Munsell developed a system of colour analysis based around hue, value, and Chroma. These elements from a tree- dimensional model: starting with a circular relationship of hue, Munsell established a decimal notational

system to describe the transitional relationship as one colour is identified from another. (Grimley & Love, 2007)

HSB (Hue, Saturation and Brightness)colour can be defined by its hue (wavelength), saturation (chrome, purity or intensity) and brightness (value) (Color Wheel, 2009)

- Hue is the colour's name (red, blue, etc.). It is placed in the colour circle. Hue represents what you typically think of as the colour. (Color Wheel, 2009)

- Brightness or value is the darkening or lightening of a hue. Mixing black with a colour will darken the colour, producing a shade of the original colour. White has no colour pigment and gray is mixture of black and white. Adding white to a colour lightens the original colour, producing a tint. (Jefferis, A. Madsen A. D , 1986)

- Saturation or intensity is the brightness or strength of specific colour. A colour is brightened as removing neutralizing factors increases its purity. Sports cars often have high intensity colours. A colour is softened by adding the colour that is directly opposite of it on the colour wheel. Low intensity colours such as mint green are used to create a calming effect. (Jefferis & Madsen, 1986)

HSB systems serve as first in recognizing the relationship of balance, proportion and harmony, and effect that combinations of colours can produce its merits and applications

for an interior design practice. Furthermore, translation to a tree dimensional design space needs to be tested in situ to observe the results. The following pages examine how one of these systems that elaborated by Itten_ functions as a model for developing a deeper understanding of colour. (Grimley & Love, 2007)
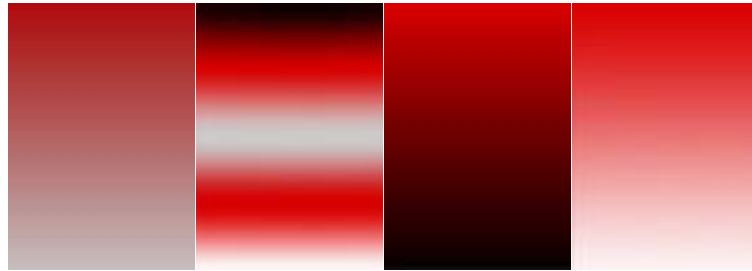
Figure 57: HSB (Grimley & Love, 2007)

4.3.6 Colour temperature

Colour inherently has temperature, and also classified as warm or cool and natural. Colours seen in warm objects, such as the reds and oranges of burning coals, are warm colours. Warm colours make objects seem larger or closer than the reality. (Jefferis & Madsen, 1986)

Blues greens and violet are cool colours. These colours often make objects appear farther away. Most designers use neutral colours for the major portions of a home and rely on the trim and roofing for accent colours. (Jefferis & Madsen, 1986)

Neutrals (whites, grays, too, have temperature. In the pantone colour system, cool grays tend toward blue, while warm grays gradate towards brown. (Grimley & Love, 2007, p. 140)

Warm and Cool Colors

Figure 58 : warm and cool colour by (Grimley & Love, 2007)

4.3.7 Colour schemes

Colour schemes are the result of turning colour combinations into a set of ruled for interior palette. Grounded in colour theory, the designer can creatively select and organize colour in harmonious combinations. In short that is when colour is not tied to a material- there are six "classic" combinations of colour: monochromatic, analogous, complementary' split, triadic, and tartaric. The examples below use a full-saturation colour wheel, but the designer can vary both saturation and brightness. (Grimley & Love, 2007)

Monochromatic

Uses a single color in a variety of saturations and lightnesses to unify a scheme.

Analogous

Uses colors directly adjacent to the chosen color. The prime color serves as the dominant color in the scheme.

Complementary

High-contrast scheme developed by paring the chosen color with that directly opposite on the color wheel.

Figure 59: Colour schemes (Grimley & Love, 2007)

Split Complementary

Variation on the complementary scheme that pairs the chosen color with two adjacent colors.

Triadic

Uses colors equally spaced around the color wheel. Produces high-contrast schemes.

Tetradic

Uses two complementary color pairs. Proportions of colors must be chosen carefully to maintain balance.
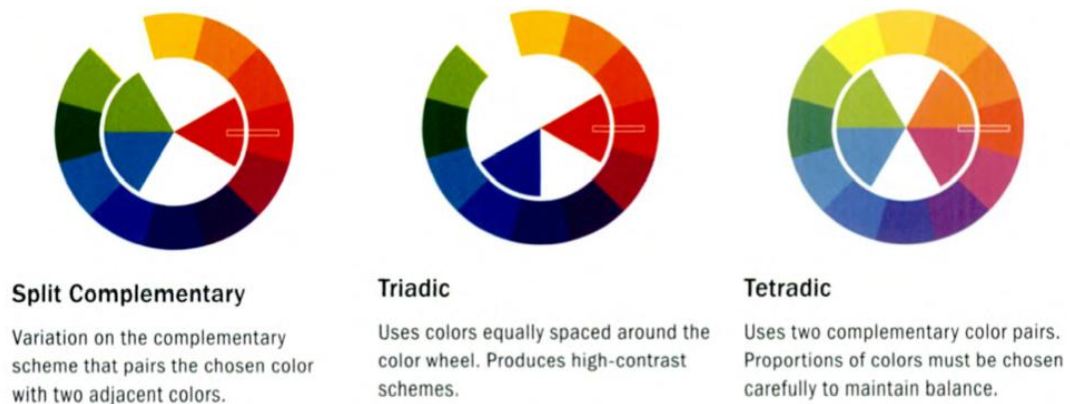
Figure 60: Colour schemes (Grimley & Love, 2007)

The colour wheel can be alienated into varieties that are visually (active) or (passive). Active colors will seem to advance when located against passive hues. Passive colors appear to recede when placed against active hues. Colours are believed to have less visual weight than the receding colors. Warm and saturate, light value hues are active colour and also have visual advance. And also cool, low saturated, dark value colours are passive colors and have visually receded. (Ford, worqx, 1998-2009)

58
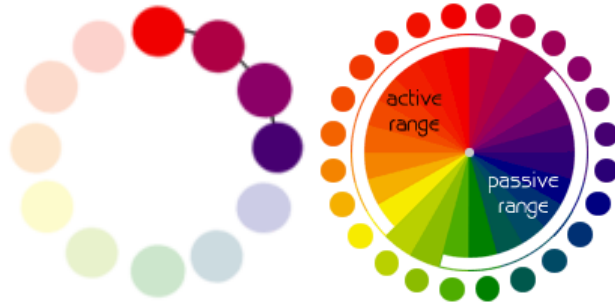
Figure 61 : analog colors (Ford, worqx, 1998-2009),

Figure 62: active passive colors by (Ford, worqx, 1998-2009)

4.3.8 Complementary Colours

With looking at the colour wheel it is easy to understand the complementary colours. It is obvious that the colours that placed in front of each other are complementary colors they have good combination in design. (Ford, worqx, 1998-2009)

Figure 63: complementary colors, (URL40)

4.3.9 Colour Shade and Tints

On of the way for introducing colour is tint and shad of each colour it means by different saturation and also testing with shades or tints whit colour we can have several kinds of colour. (Ford, worqx, 1998-2009)
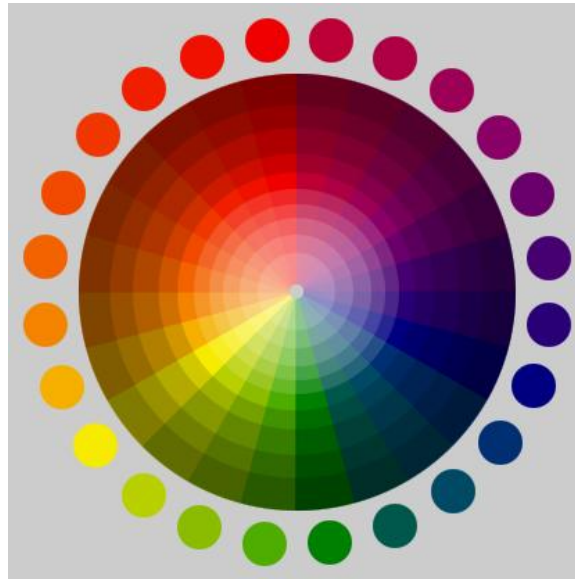
Figure 64: colour shade and tint (Ford, Worqx, 1998-2009)

4.3.10 Colour & Contrast

The colour relation between foreground and background shows colour contrast. When an object has a more contrast with for ground of itself it means it is more visible and easy to recognize. (Colour and eye strain, 2011)

Applying rules of contrast to interior space in the seven variations on colour contrast that Itten identified, contrast was considered of colour interaction. The projects that follow

explore the practical application of Itten's system to an interior project _whether at the scale of a room or a building as with any system, continued exposure to and examination of effects of each set relationship will deepen understanding. (Grimley & Love, 2007)
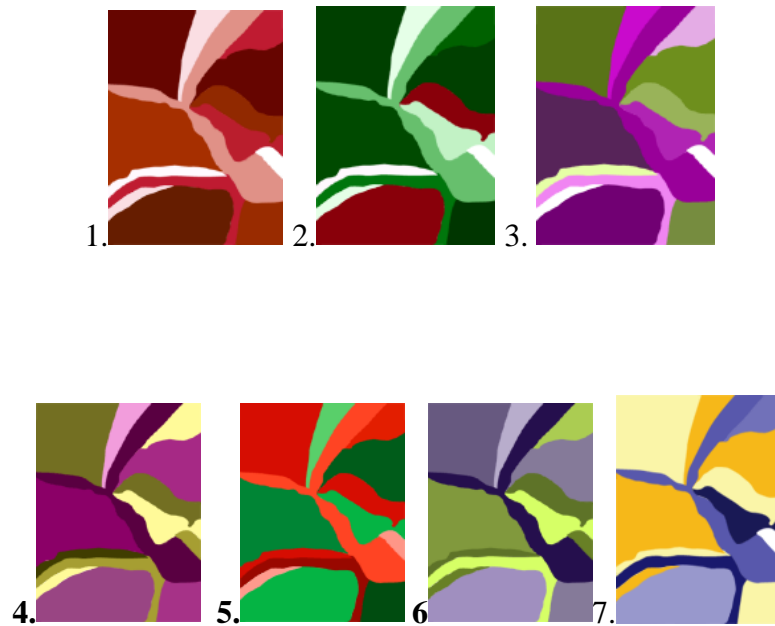
Figure 65: Itten colour contrast, (Itten, 2000,2001)
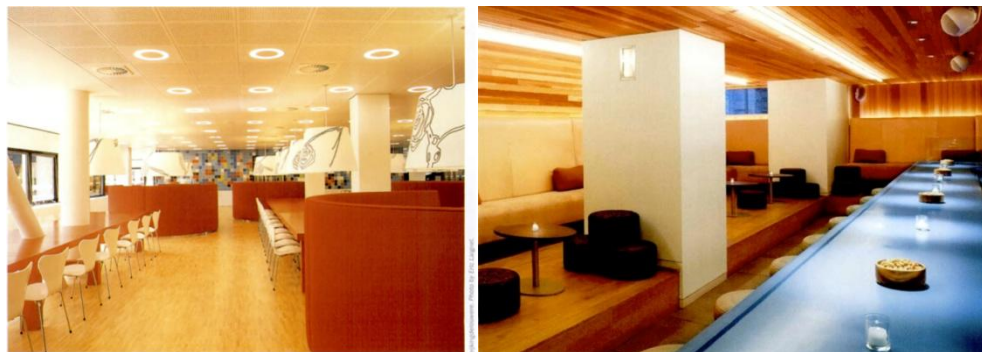
Figure 66, 67 Andre Balazs Hotel: (Grimley & Love, 2007)

Figure 66: for a Lounge in the Andre Balazs Hotel QT, Lindy Roy uses a cold-warm contrast to distinguish the different zones of the space. The bar is surfaced in a cool blue that acts as a functional highlight against the warm, intimate spaces that surround it. C.Grimley , M.Love (2007)

A unique architecture piece was created in Luxembourg, (figure 67). A pedestrian bridge in the city of Esch/Alzette which is the second biggest city after the capital Luxembourg. The object by architecture studio Metaform Architects has received an award for the building of the year 2010 from web site archdaily.com. The main idea was to create a direct connection between the heart of the city and green surroundings – Gelgenberg park. The bridge traverses a railway that has divided roughly these two areas. The design is very specific and unique characterized by minimalistic but organic form accentuated by contrasting colours. While the exterior is white, neutral, the interior is red, the contrast provides an aesthetic experience. People passing the bridge experience a glimpse of future. The object clearly contrasts with surrounding chaotic environment. The bridge has a unique energy that emits into the surrounding areas. (Disease, 2007)

Figure 68: pedestrian bridge in the city of Esch Alzette , (Disease, 2007)

4.3.11 Colour and material

Its association with materials further complicates the role of colour in interior design. Materials have qualities of absorption, reflectance, and luminance that the abstract systems of colour can occur within a single material sample. The proportional use of material within a three-dimensional space also affects how colour is experienced. Through the complex interaction of colour and material, an interior designer can create atmospheres of intimacy or freshness, vibrancy or muteness, and even begin to affect other senses such as sight and hearing. (Grimley & Love, 2007)

4.4 Texture

Texture is the another formal aesthetic element. It has a powerful effect when we usually look at the space. And also it has an important role on the visual scale of the space It means it can makes a room to look very small and dark or large and light. So this is the art of designer to choose the best one for each space (Lewitin, 2002-2006)

4.4.1 Texture and Nature

Texture has a strong relationship with nature because it is all around nature of material. For example surface of a leaf of the tree, grass, wood, seashell, sand and shell at seaside texture. So texture can be organic and found everywhere. And also texture is very important in decorating. (Texture in Interior Decorating, 2011)

Figure 69: texture (Texture in Interior Decorating, 2011)

Texture shows the feels of the surface. Human can touch surface and understand that is rough or just see that feels it is rough. Therefore texture has a direct effect on the way people feel and also on the way it looks. (Lewitin, 2002-2006)

Texture, which refers to the roughness or smoothness of an abject, is an important factor in selecting materials to complete a structure. Surface with roughness tend to make a feeling of power; examples include concrete stone and rough wood. Rough surfaces also reduce the height of objects. The hard smooth shiny textures tend to look cold to the eye and to the touch.

Figure 70: Texture (look4 design)

Figure 71, right: Visual Texture, (How to Design Your Own Home, 2009)

Figure 72, left: pattern and texture. J Gibbs (2005)

4.4.2 Texture and Weight

Designers are no more limited to regular visual foundations such as lines and colors since they are exposed to use texture to create another view of a space. As such, they can actually make a space get a new feeling by carefully using this element. (Lewitin, 2002-2006)

It is very important for client and architect to have a professional and well experienced designer with the required knowledge in understanding of interior architecture. The interior designer must be verse with ways to efficiently combine colour, use appealing textures and other objects to make a space functionally and aesthetically efficient. There will evidently be a reduction in cost and time as well as early diagnosis of probable problems in design if the interior designer is experienced. (Brown, 2011)

4.4.3 Texture and proportion

Eleanor McMillen Brown mentioned that: "The basic rules of proportion and scale are unchanging". (Brown, 2011)

Designers can use small patterns on large pieces of furniture, but cannot use large patterns for small furniture. They must therefore use scale, size and proportion carefully in order to produce efficient designs. A large pattern on a small one produces an dominant or disproportionate design. (Learn about Using Texture and Pattern with Colour, 2010)

When it comes to pattern, no specific rule exists. Designer can make a space look nice by using many different combinations such as mixing geometrics with floral, textures and stripes. It does not matter which specific form is used but if there is efficient balancing of the weight of the various patterns to the underlying items. (Learn about Using Texture and Pattern with Colour, 2010)

In figure 73 a repetition of image on the wall makes a texture and it is very eye catching in the space.

Figure 73: texture, (2011)

4.4.4 Texture and Colour

A space with a single colour usually is dull and boring. Texture can be applied to such a space to make it more appealing. This principle is known as scruffy chic ornamental style. In this situation, everything else is painted the same but at the same time; in this example using texture creates contrast. (Lewitin, 2002-2006)

In the past, interior architects were very conservative with texture and centred mainly on using single tactile elements on a space. Any contrast created was seen to be a very slow and almost invisible blend from one colour to another. (Lewitin, 2002-2006)

Balance can be achieved by mixing smooth and rough textures to create contrast. A harmonious environment can be obtained by perfectly blending the texture and patterns.

Sometimes the final aim is to create a smooth and shiny look. (Texture and pattern, 2008)

No rules therefore exist if we want to put balance of horizontal, vertical and oblique in a room in which the intention is to keep the walls quiet. A balance of these features is good to make the room appealing. (Morris, 2011)

Incorporating texture

- Texture incorporates in decorating schemes that projects energy and makes the home attractive. Designers must be capable of combining materials in a way that brings out the sense of beauty.

- To add some nice texture into an area like the fireplace, mantles and even walls, the room can be made attractive and intrigue.

- A masculine refinement and sensuality can be added by using leather sofas, benches, chairs, and books. They arouse, warm to the touch.

- The presence of flowers, fruit, and plants bring in life to a room. A woven basket filled with flowers gives. (Texture, 2011)

4.4.5 Types of texture and pattern:

The fundamental patterns used in architecture are geometric pattern, floral pattern, motif and pictorial pattern.

Geometric Pattern:

This type of pattern is mainly decorative but when well used in another context as a tool to manipulate space by serving to deceive the eye. (Texture, 2011)

4.4.5.1 Floral Pattern

Floral patterns are very easy to recognize. It has lots of flowers on that. Designers use numerous floral patterns together in a design scheme to manipulate vision of the space(Texture, 2011)

Figure 74, Figure 75 : floral pattern , motif, pictorial (Texture, 2011)

4.4.5.2 Motif Pattern

The repetition of picture creates motif pattern it can be simple or complex. For example the photo of shell in the bathroom of a girl on the wall paper. (Texture, 2011)

4.4.6 Layers of interior design texture

The texture of the ceiling, wall, and mouldings and doors give an appealing sense based on how it is done. Painting these with contrasting colour projects accentuates them. If

our intention is to make them disappear, it will be better to paint them all with the same colour as the walls. (Morrow, 2008)

The texture of walls and floors is also very relevant because they give an immediate impression when one walks into a room. Walls can simply be painted as the background. Wallpaper or wall coverings are better for texture on an accentuated wall. (Morrow, 2008)

Chapter 5

ANALYSIS OF FIELD STUDY

When the subject is architecture, reference is made regarding designing and constructing physical space. It deals mainly with the science and art of building and construction. For both interior architect and architects, knowledge of how to put structures together in a balanced fashion in order to produce a functionally stable and safe design is the basis of operation.

Interior architecture on the other hand is a more particular field, which deals mainly designing indoors spaces. In involves creative design, the layout, ergonomics and other aspects relevant to indoor space. Putting furniture together and rendering colour in a decorative manner to indoors space is the business of an interior architect.

Although the architect creates or designs the interior space as well, it must be noted that both fields even though similar, are complementary for a piece of work to be efficiently implemented. As such it could be said that both the architect and interior architect "speak the same language".

According to the American Society for Interior Designers (ASID), an interior designer's job is to identify, conduct relevant research to creative problems related to function and quality of an interior space. The main duties pertaining to interior space include programming, design analysis, space planning and aesthetics, building codes, material, furnishing and function etc. Interior designers undergo formal training in drawing and documents preparation in pertaining to interior space so as to protect the health, safety and welfare of the society. (ACID, 2011)

Sample Questionnaire

Name:…………………………… Surname …………………………

Architect	
Interior architect	

Preferences:

Please order the following design elements according to your own preferences. Use either the alphabets or name of elements.

RESTURANT

Priorities	A, B, C, …	Formal aesthetic elements	Formal aesthetic elements
1. First			**A Colour**
2. Second			**B Form**
3. Third			**C Texture**
4. Forth			**D Lighting**
5. Fifth			**E Shadow**

HOUSE

Priorities	A, B, C, …	Formal aesthetic elements	Formal aesthetic elements
1. First			**A Colour**
2. Second			**B Form**
3. Third			**C Texture**
4. Forth			**D Lighting**
5. Fifth			**E Shadow**

5.1 Classification of Preferences

The questionnaire shown above illustrates the sample questions that the architects and interior architects were requested to answer. As it can be seen from the questionnaire asks the architects to clarify whether they are an architect or interior architect. The total number of architects that completed the questionnaire is 80 divided equally into two groups of 40 architects and 40 interior architects. The reason that there are 40 architects in each group is that the number of architects in the two groups had to be identical in order to make statistical correlation possible. Furthermore, the reason that the number of architects in groups is limited by 40, is that it was not possible to find more than 40 interior architects to take part in the project.

The questionnaire seeks to determine the priority of five formal aesthetic (form, colour, texture, light and shadow) according to architects and interior architects. The importance of the formal aesthetics in two different subjects of house and restaurant are going to be prioritized according to the architects and interior architects that took part in this project. The subjects (house and restaurant) were chosen due to the fact that these subjects attract more attention from the interior architecture point of view than other subjects do in North Cyprus.

The charts and tables below show the different formal aesthetic elements and how important they are for either an architect or an interior architect taking a house or

restaurant as the focal point. A sample of 40 architects and 40 interior architects was taken into consideration and their preferences were ranked.

5.2 Interpretation of Results

An analysis of the data collected regarding the preferences of architects and interior architects when selecting the elements of preference in the design of a house or restaurant is covered in this section. The formal aesthetic elements are ranked from first to fifth.

5.2.1 Interior Architects Preference for a House

The table below illustrates the number of interior architects that defined a formal aesthetic as the most important element in house. Since there are 40 participants and four of the five formal aesthetics were chosen by them (shadow was not chosen as an important element by any of the participants) the expected number N is 10. SPSS software was used to determine the correlation of the elements. Since the software uses numbers as codes instead of alphabetical letters the codes were chosen as it can be seen from the table. Each formal aesthetic element is assigned a code, for instance the assigned code of form is 2.00.

Chi-Square Test

Frequencies

Table 1: First choice of Interior Architects

	Observed N	Expected N	Residual
1.00 colour	4	10.0	-6.0
2.00 form	26	10.0	16.0
3.00 texture	6	10.0	-4.0
4.00 light	4	10.0	-6.0
Total	40		

_ No one put shadow as First choice opinion therefore in table above shadow element is not exist

Table 2: Second choice of Interior Architects

	Observed N	Expected N	Residual
1.00 colour	15	8.0	7.0
2.00 form	5	8.0	-3.0
3.00 texture	10	8.0	2.0
4.00 light	6	8.0	-2.0
5.00 shadow	4	8.0	-4.0
Total	40		

Table 3: Third choice of Interior Architects

	Observed N	Expected N	Residual
1.00 color	10	8.0	2.0
2.00 form	2	8.0	-6.0
3.00 texture	12	8.0	4.0
4.00 light	13	8.0	5.0
5.00 shadow	3	8.0	-5.0
Total	40		

Table 4: Fourth choice of Interior Architects

	Observed N	Expected N	Residual
1.00 color	9	8.0	1.0
2.00 form	6	8.0	-2.0
3.00 texture	7	8.0	-1.0
4.00 light	14	8.0	6.0
5.00 shadow	4	8.0	-4.0
Total	40		

Table 5: Fifth choice of Interior Architects

	Observed N	Expected N	Residual
1.00 color	2	8.0	-6.0
2.00 form	1	8.0	-7.0
3.00 texture	5	8.0	-3.0
4.00 light	3	8.0	-5.0
5.00 shadow	29	8.0	21.0
Total	40		

- **The result of interior architects preferences for the house from chi- square test and frequencies:**

Table 6: Interior architects/ House

Choices

Elements	1st	2nd	3rd	4th	5th	Sum
Color	4	15	10	9	2	40
Form	26	5	2	6	1	40
Texture	6	10	12	7	5	40
Light	4	6	13	14	3	40
Shadow	0	4	3	4	29	40
Sum	40	40	40	40	40	

The above table exhibits the number of times that each formal aesthetic element was chosen to be of a determined level of importance according to interior architects. The first row shows the ranking of elements from first to fifth; where the first column shows the formal aesthetic element. The second column for instance shows the number of participants that chose a formal aesthetic element to have the highest priority in the house. For example 6 interior architects chose texture to be the most important formal aesthetic element in the house.

Interior Architects Preference order for the House
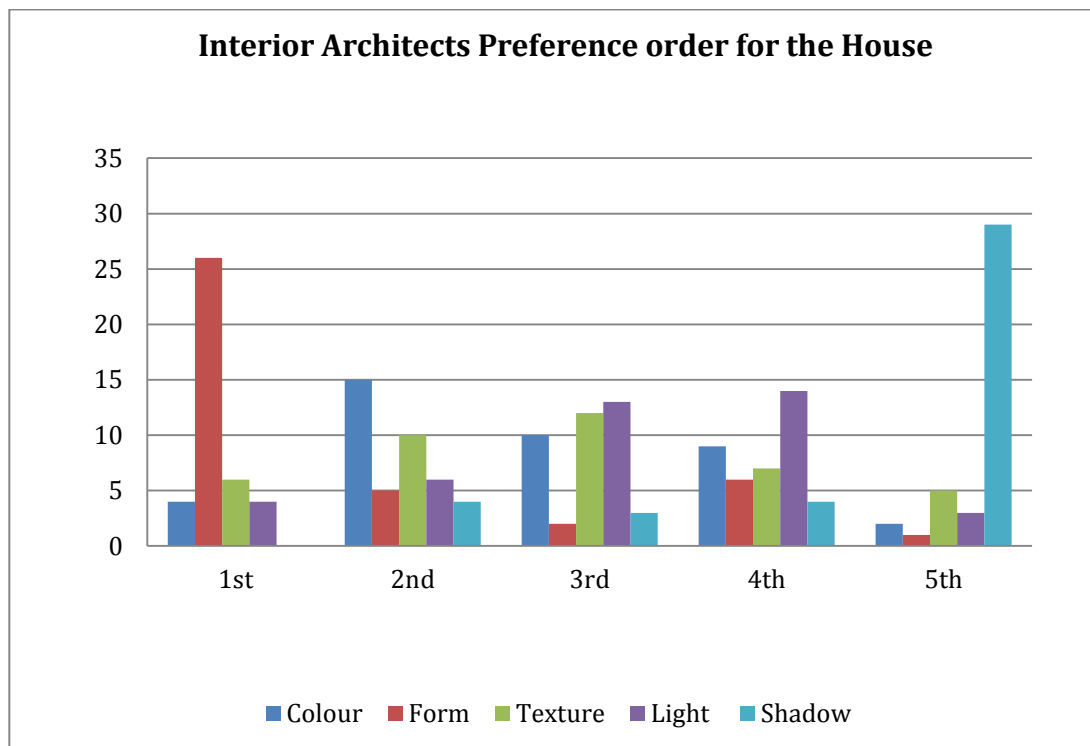
The chart above shows the number of interior architects that chose a formal aesthetic element to have a specific ranking according to its importance in house. The horizontal

axis shows the ranking of the elements while the vertical axis shows the number of interior architects that chose an element.

The above chart show interior architects regarding their choice of several formal aesthetic elements (colour, form, texture, light, shadow) for a subject of house. From the chart, form (red column) has the highest degree in 1st choice of interior designer and obviously form has lower degree in other level (2nd, 3rd, 4th , 5th) of choices. It means is the most important elements taken into consideration for interior designer when designing a house. Colour is the second choice of the interior designer it means it is very important for them but after form. In third choice texture and light are very close to each other. It shows that these two elements have same degree of importance for them. The Fifth choice is shown the last choice of designers, so from the chart in 5th choice shadow (light blue one) is highest column so it is obvious that shadow has the least important degree for the interior designers in order to design a house.

5.2.2 Interior Architects Preference for a Restaurant

Chi-Square Test

Frequencies

Table 7: first choice of Interior Architects

	Observed N	Expected N	Residual
1.00 colour	3	8.0	-5.0
2.00 form	18	8.0	10.0
3.00 texture	1	8.0	-7.0
4.00 light	15	8.0	7.0
5.00 shadow	3	8.0	-5.0
Total	40		

Table 8: second choice of Interior Architects

	Observed N	Expected N	Residual
1.00 colour	11	8.0	3.0
2.00 form	3	8.0	-5.0
3.00 texture	6	8.0	-2.0
4.00 light	14	8.0	6.0
5.00 shadow	6	8.0	-2.0
Total	40		

Table 9: Third choice of Interior Architects

	Observed N	Expected N	Residual
1.00 colour	9	8.0	1.0
2.00 form	4	8.0	-4.0
3.00 texture	16	8.0	8.0
4.00 light	9	8.0	1.0
5.00 shadow	2	8.0	-6.0
Total	40		

Table 10: Forth choice of Interior Architects

	Observed N	Expected N	Residual
1.00 colour	15	8.0	7.0
2.00 form	7	8.0	-1.0
3.00 texture	13	8.0	5.0
4.00 light	2	8.0	-6.0
5.00 shadow	3	8.0	-5.0
Total	40		

Table 11: Fifth choice of Interior Architects

	Observed N	Expected N	Residual
1.00 colour	2	10.0	-8.0
2.00 form	8	10.0	-2.0
3.00 texture	4	10.0	-6.0
5.00 shadow	26	10.0	16.0
Total	40		

_ No one put light as a fifth choice opinion therefore in table light element is not exist

- **The result of interior architects preferences for the restaurant from chi-square test and frequencies:**

Table 12: Interior architects preferences for a Restaurant

Choices

Elements	1st	2nd	3rd	4th	5th	Sum
Color	3	11	9	15	2	**40**
Form	18	3	4	7	8	**40**
Texture	1	6	16	13	4	**40**
Light	15	14	9	2	0	**40**
Shadow	3	6	2	3	26	**40**
Sum	**40**	**40**	**40**	**40**	**40**	

Table above shows in the subject of restaurant 3 interior architects choose colour as their first choice, 11 of them choose colour as 2nd choice, 9 of them choose colour as 3rd choice. And also 18 interior architects choose 'form' as their first choice. 3 of them choose form as 3nd choice.None of the interior architects choose light as their last (5th) choice.And 3 interior architects choose shadow as their first choice, 26 people choose shadow as their fifth choice.

Interior Architects Preference Order for a Restaurant
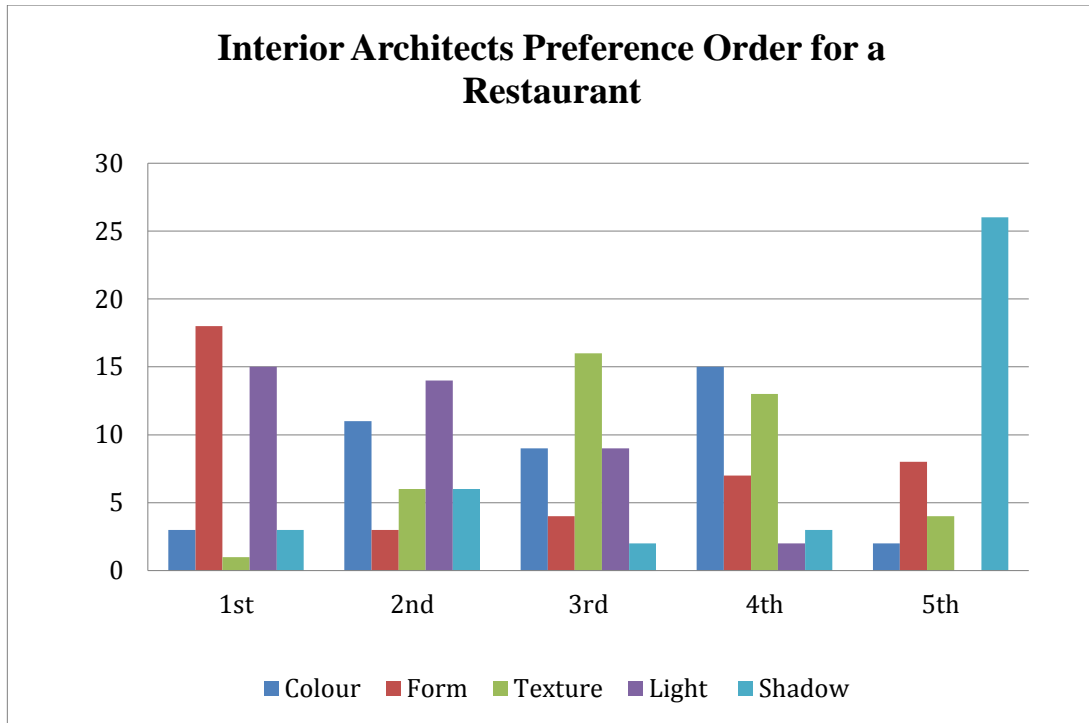
The chart above show interior architects regarding their choice of different formal aesthetic elements for a subject of restaurant. In 1st choice of interior designer, form (red column) has the highest degree it means again in the restaurant form is the most important element for interior designer.

After form light (violet column) is the important elements for the designing restaurant. Texture (green column) is the third or forth choice for the most of the designers. Colour gets the forth place, It means it is not very important in designing restaurant for interior designers.

The Fifth choice shows the last choice of designers, So from the chart shadow is highest column in fifth level of preferences, So it is obvious that shadow has the least important element for the interior designers in order to designing a restaurant.

5.2.3 Architects Preference for a House

Chi-Square Test

Frequencies

Table 13: First choice of Architects

	Observed N	Expected N	Residual
1.00 colour	1	10.0	-9.0
2.00 form	29	10.0	19.0
4.00 light	8	10.0	-2.0
5.00 shadow	2	10.0	-8.0
Total	40		

_ No one put texture as First choice opinion therefore in table light element is not exist

Table 14: Second choice of Architects

	Observed N	Expected N	Residual
1.00 colour	13	8.0	5.0
2.00 form	3	8.0	-5.0
3.00 texture	10	8.0	2.0
4.00 light	12	8.0	4.0
5.00 shadow	2	8.0	-6.0
Total	40		

Table 15: Third choice of Architects

	Observed N	Expected N	Residual
1.00 color	11	8.0	3.0
2.00 form	5	8.0	-3.0
3.00 texture	6	8.0	-2.0
4.00 light	14	8.0	6.0
5.00 shadow	4	8.0	-4.0
Total	40		

Table 16: Forth choice of Architects

	Observed N	Expected N	Residual
1.00 color	12	8.0	4.0
2.00 form	3	8.0	-5.0
3.00 texture	16	8.0	8.0
4.00 light	4	8.0	-4.0
5.00 shadow	5	8.0	-3.0
Total	40		

Table 17: Fifth choice of Architects

	Observed N	Expected N	Residual
1.00 color	3	10.0	-7.0
3.00 texture	8	10.0	-2.0
4.00 light	2	10.0	-8.0
5.00 shadow	27	10.0	17.0
Total	40		

_ No one put form as a fifth choice opinion therefore in table light element is not exist

- **The result of architects preferences for the house from chi- square test and frequencies:**

Elements	1st	2nd	3rd	4th	5th	Sum
Color	1	13	11	12	3	**40**
Form	29	3	5	3	0	**40**
Texture	0	10	6	16	8	**40**
Light	8	12	14	4	2	**40**
Shadow	2	2	4	5	27	**40**
Sum	**40**	**40**	**40**	**40**	**40**	

Table above shows in the subject of 'House' 1 architect choose colour as the first choice, 13 of them choose colour as 2nd choice, 11 of them choose colour as 3rd choice.

And also 29 architects choose 'form' as their first choice. 5 of them choose form as 3nd choice and none of them choose form as last choice.

Also none of the architects choose texture as their first choice.

And 2 architects choose shadow as their first choice, 27 people choose shadow as their fifth choice.

Architects Preference order for a House
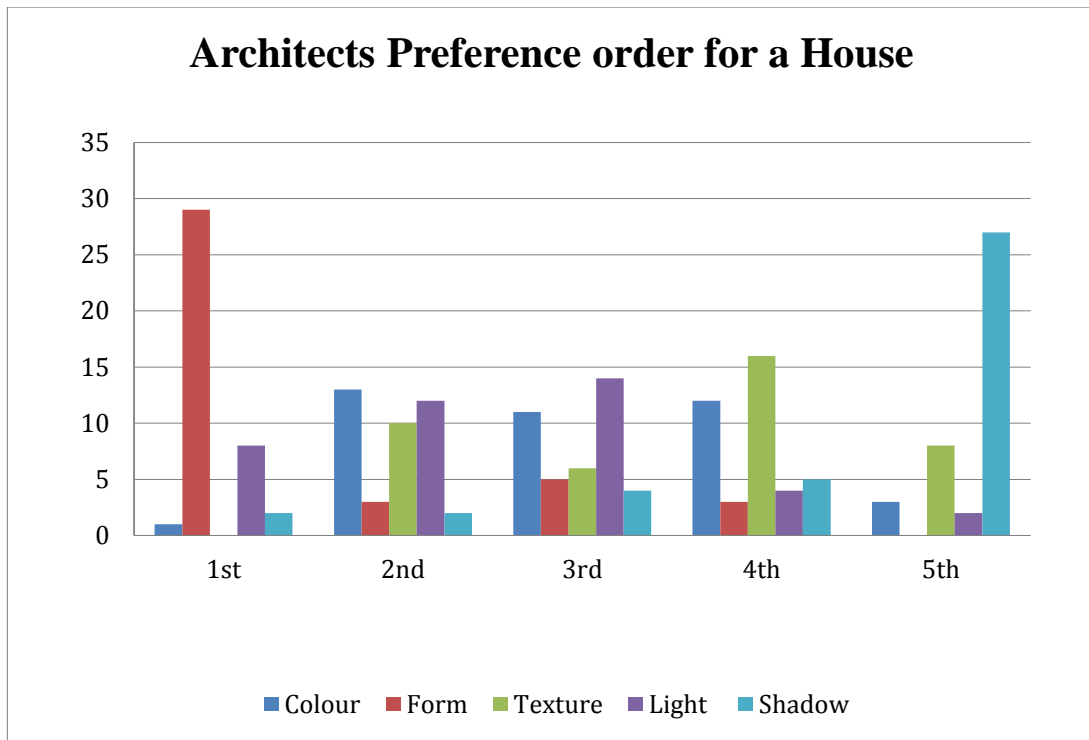
The above chart display architects regarding their choice of different formal aesthetic elements for a subject of house. Again from the chart, form has the highest degree in 1st choice of architects so form has lower height in other level of choices. It means is the most important elements taken into consideration for architects when designing a house. Colour columns move very close to each other in second, third and forth choice of the architects. In third choice light is the highest one it means light is in average degree of importance for the architects in designing house. After that texture take place in forth level so it is not very important for architects. From the chart in 5th choice shadow is highest column in fifth choice so shadow is the last choice of architects and it is not important like other aesthetical elements.

5.2.4 Architects Preference for a Restaurant.

Chi-Square Test

Frequencies

Table 18: First choice of Architects

	Observed N	Expected N	Residual
1.00 color	6	8.0	-2.0
2.00 form	20	8.0	12.0
3.00 texture	2	8.0	-6.0
4.00 light	10	8.0	2.0
5.00 shadow	2	8.0	-6.0
Total	40		

Table 19: Second choice of Architects

	Observed N	Expected N	Residual
1.00 colour	12	8.0	4.0
2.00 form	6	8.0	-2.0
3.00 texture	10	8.0	2.0
4.00 light	11	8.0	3.0
5.00 shadow	1	8.0	-7.0
Total	40		

Table 20: Third choice of Architects

	Observed N	Expected N	Residual
1.00 colour	15	8.0	7.0
2.00 form	3	8.0	-5.0
3.00 texture	11	8.0	3.0
4.00 light	10	8.0	2.0
5.00 shadow	1	8.0	-7.0
Total	40		

Table 21: Forth choice of Architects

	Observed N	Expected N	Residual
1.00 color	7	8.0	-1.0
2.00 form	7	8.0	-1.0
3.00 texture	15	8.0	7.0
4.00 light	7	8.0	-1.0
5.00 shadow	4	8.0	-4.0
Total	40		

Table 22: Fifth choice of Architects

|	Observed N	Expected N	Residual
2.00 form	4	10.0	-6.0
3.00 texture	2	10.0	-8.0
4.00 light	2	10.0	-8.0
5.00 shadow	32	10.0	22.0
Total	40		

_ No one put color as a fifth choice opinion therefore in table light element is not exist

- **The result of architects preferences for the restaurant from chi- square and frequencies test:**

Choices

Elements	1st	2nd	3rd	4th	5th	sum
Colour	4	15	10	9	2	40
Form	26	5	2	6	1	40
Texture	6	10	12	7	5	40
Light	4	6	13	14	3	40
Shadow	0	4	3	4	29	40
Sum	40	40	40	40	40	

Table above shows in the subject of 'restaurant' 4 architects choose colour as the first choice, 15 of them choose colour as 2nd choice, 10 of them choose colour as 3rd choice ,

And also 26 architects choose 'form' as their first choice. 2 of them choose form as 3nd choice. And none of architects choose shadow as their first choice, 29 people choose shadow as their fifth choice.

Architects Preference Order for a Restaurant
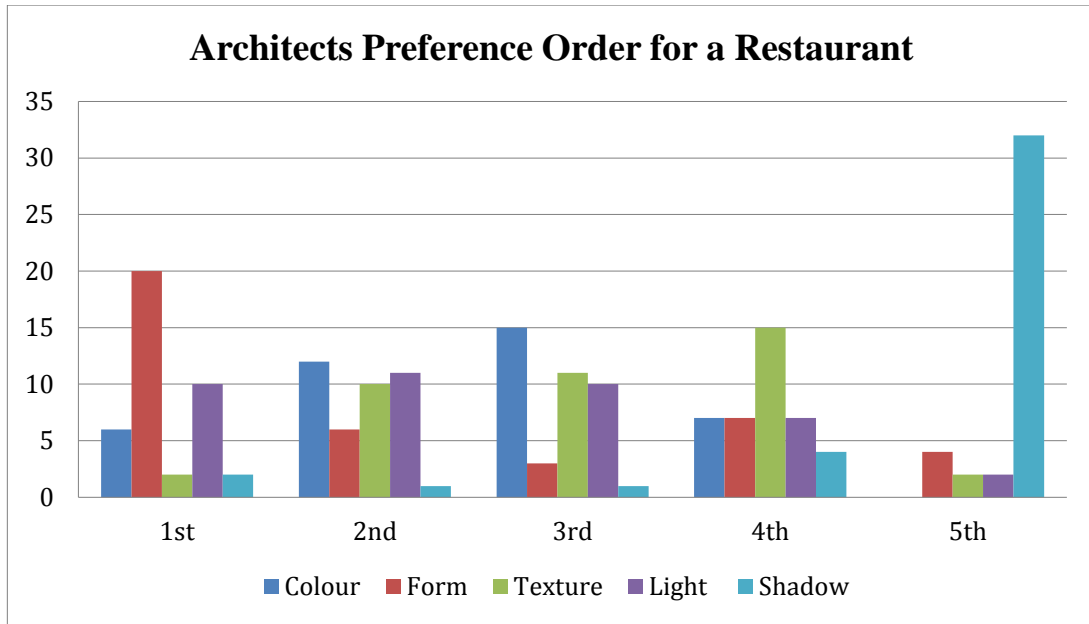
From the chart above shows architects regarding their choice of different formal aesthetic elements for a subject of restaurant. Chart display form again is the highest one in first choice of architects. It means is the most important elements taken into consideration for architects when designing a restaurant.

Texture and light (green and violet columns) are very close to each other in second, third choice it means these two elements have same value for the architects. In third choice colour is the highest one it means colour is in average degree of importance for the architects in designing house. Texture also takes place in forth level so it is not very important for some of the architects. Shadow is highest column in fifth choice so shadow is the last choice for most of the architects and it is not important like other aesthetical elements.

- CORREL function

Returns the correlation coefficient of the array1 and array2 cell ranges. Use the correlation coefficient to determine the relationship between two properties. For example, we can examine the relationship between architects and interior architects in the subject of house.

Argument	Description	Remarks
array1	A cell range of values.	• If an array or reference argument contains text, logical values, or empty cells, those values are ignored. However, cells with the value zero are included. • If this argument is empty, this function returns the #DIV/0! error value.
array2	A second cell range of values.	• If an array or reference argument contains text, logical values, or empty cells, those values are ignored. However, cells with the value zero are included. • If this argument is empty, this function returns the #DIV/0! error value.

General remarks

- If the arguments have a different number of data points, this function returns the #N/A error value.

- If s (the standard deviation) of **array1** and **array2**'s values equals zero, **CORREL** returns the #DIV/0! error value.

The equation for the correlation coefficient is:

$$Correl(X,Y) = \frac{\sum (x-\bar{x})(y-\bar{y})}{\sqrt{\sum (x-\bar{x})^2 \sum (y-\bar{y})^2}}$$

where x and y are the sample means **AVERAGE(array1)** and **AVERAGE(array2)**.

5.3 Comparison of Preferences to find out correlations

5.3.1 Architects and Interior Architects' Preferences for House

Color in house	
Color Interior *Array 1*	Color architecture *Array 2*
4	1
15	13
10	11
9	12
2	3
0.898407667	
Weak/correlation	

The above table shows the correlation coefficient that was estimated in order to identify whether the relation between the interior architects and architects point of view on the importance of colour in house is substantial. According to Chi square formula if the estimated coefficient is more than %95 then the relationship between the properties that are being studied are strong. Therefore it can be induced from the estimated correlation coefficient above that correlation between the importance of colour according an interior architect and an architect in house has an 89.8% positive correlation. This is near to 95%

so there is weak correlation between them. This is evident because both architects and interior architects consider colour significantly important to portray the beauty of a house.

Form in house	
Form	Form
Interior	architects
26	29
5	3
2	5
6	3
1	0
0.977738241	
Strong/correlation	

The above table shows the correlation coefficient that was estimated in order to identify whether the relation between the interior architects and architects point of view on the importance of form in house is substantial. According to Chi square formula if the estimated coefficient is more than %95 then the relationship between the properties that are being studied are strong. Therefore it can be induced from the estimated correlation coefficient above that correlation between the importance of form according an interior architect and an architect in house has a strong correlation because when a house is

99

chosen as the subject in question, the architect and interior architects share some views when it comes to 'Form. It has a 97.7% positive correlation, this number is more than 95% therefore the correlation between them can be determined to be substantial. This is evident because both architects and interior architects consider form significantly important to portray the beauty of a house.

Texture in house	
Texture interior	Texture architects
6	0
10	10
12	6
7	16
5	8
0.058823529	
No correlation	

Textures portray very weak correlations of 5.9% respectively in the rank of importance for designing a house. 5.9% is much less than 95% so there is no correlation. In other words there is no strong link shared between architects and interior architects on the importance of texture in house.

Light in house	
Light Interior	Light architecture
4	8
6	12
13	14
14	4
3	2
0.266678761	

No correlation

Textures portray very weak correlations of 26.7% respectively in the rank of importance
for designing a house. 26.7% is less than 95% so there is no correlation between
architects and interior architects.
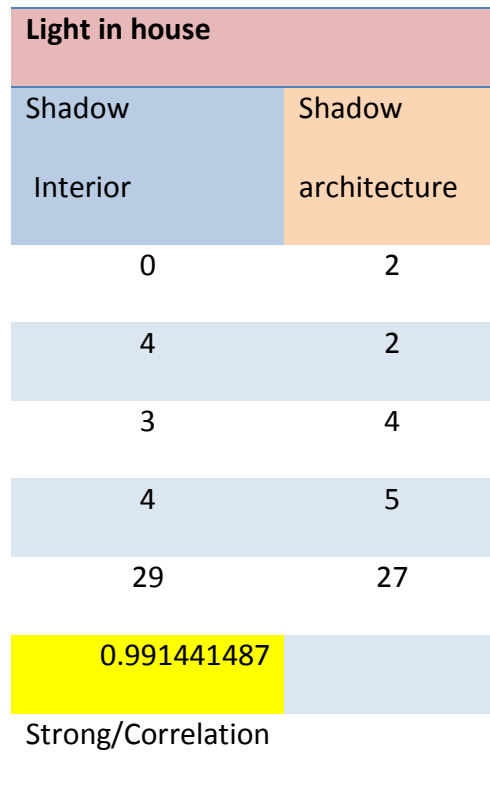
Light in house	
Shadow Interior	Shadow architecture
0	2
4	2
3	4
4	5
29	27
0.991441487	
Strong/Correlation	

Also there is a very strong correlation of 99.14% for both architects and interior architects to regard shadow as the element of 'least' preference.

5.3.2 Comparison between Architects and Interior architects Preferences for a House

Architects Preference order for a House / Interior Architects Preference order for the House
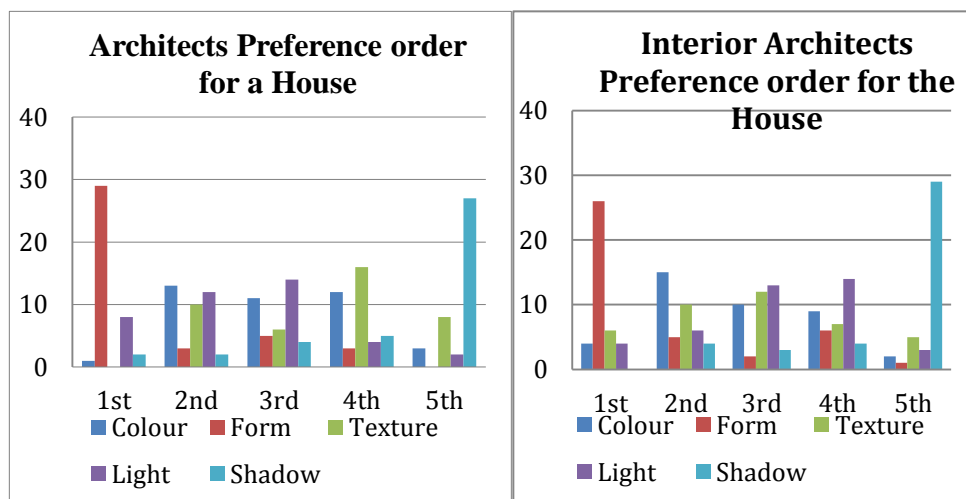
It is clear from the above tables that both the architect and interior architect have first preference as 'form' when designing a house for the same reason as earlier mentioned. They both also consider 'colour' to be their design element of second preference.

5.3.3 Interior architects and Architects' Preferences for Restaurant

Color in restaurant	
Color interior	Colorarchitecture
3	6
11	12
9	15
15	7
2	0
0.552020261	
No correlation	

Colour has no correlation with a 55.2% coefficient of correlation on the ranking of this element because 55.3% is less than 95%. It means there in no correlation in colour between architects and interior architects in the subject of restaurant.

Form in restaurant	
Form Interior	Form architecture
18	20
3	6
4	3
7	7
8	4
0.919297279	
Correlation	

Conversely, when a restaurant is the subject, the form looked upon in a like manner by both the architect and the interior architect. 91% is very close to 95% so the high correlation coefficient of 91.9% shows strong correlation in the reasoning for both of them.

Texture in restaurant	
Texture Interior	Texture architecture
1	2
6	10
16	11
13	15
4	2
0.83158075	
Weak correlation	

When a restaurant is chosen as the subject in question, the architect and interior architects share some views when it comes to 'texture. It has an 83% positive correlation. This is near to 95% so there is weak correlation between them. This is evident because both architects and interior architects consider colour significantly important to portray the beauty of a house.

Light **in restaurant**	
Light Interior	Light Architecture
15	10
14	11
9	10
2	7
0	2
0.878070365	
Weak correlation	

In restaurant the architect and interior architects share some views when it comes to 'restaurant. It has an 87% positive correlation. This is near to 95% so there is weak correlation between them same as texture.

Shadow **in** restaurant	
Shadow Interior	Shadow Architecture
3	0
6	4
2	2
3	2
26	32
0.994550368	
Correlation	

There also is a 99.5% that shadow will be the elements that both of them the 'least' on the ranking of this element. From the information derived from the data collected, it shows that architects and interior architects think shadow is not very important like the other elements.

5.3.4 Comparison between Architects and Interior architects Preferences for a Restaurant

Interior Architects Preference Order for a Restaurant

Architects Preference Order for a Restaurant
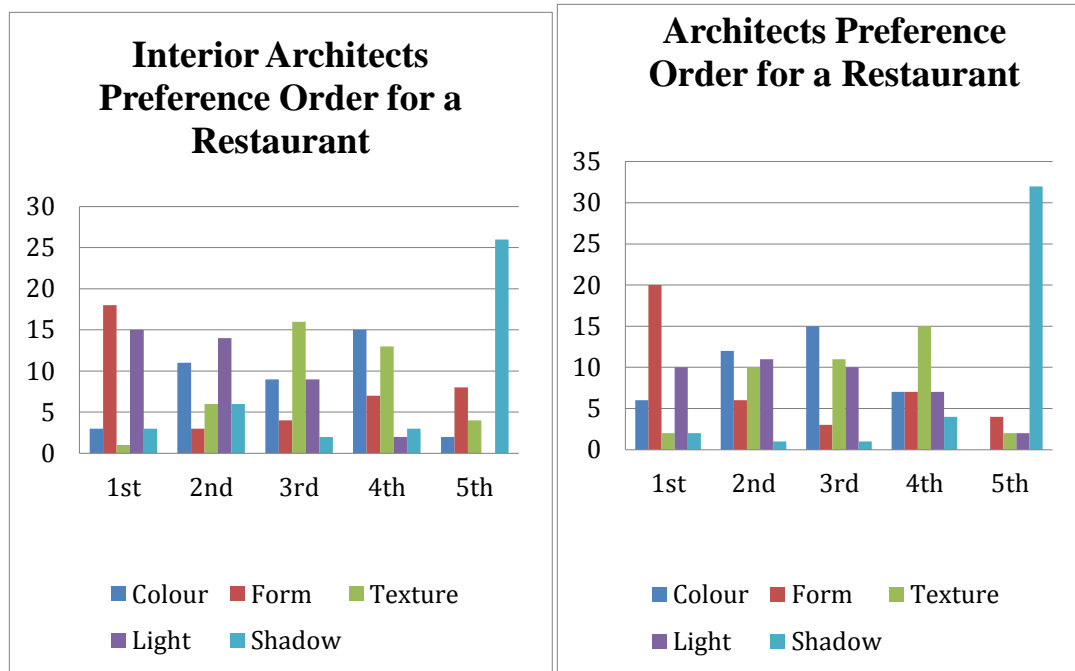
From the charts above, some similarities and differences could be seen regarding the architects and interior architects' preferences of the formal design elements when designing a restaurant. Form is the design element of first priority because it gives the initial appreciation and can be used mostly by architects is a medium to translate their ideas and feelings about their intentions.

For the interior architect, light is the element of second preference because they can use different types of light (natural or artificial) to create different moods, generate a multitude of emotions and also create an atmosphere of calm for the customers. Although the architect's second preference is colour, light is almost preferred in a similar fashion based on the data used. Light and colour move together because the

impact of colour depends on light. Texture is the next important element for interior architect while colour is for the architect. For both of them, shadow is the design element of least importance in the design process.

Chapter6

CONCLUSION AND RECCOMENDATIONS

A prominent architect stipulated that humans experience the world in two separate manners; in a logical and aesthetic manner. Aesthetics is the philosophical study of art and natural beauty and an aesthetic experience refers normally to the feelings of pleasure or displeasure that result from a regard of or interaction with a visual or aural artefact. Therefore an aesthetic relativism is the philosophical view that the judgment of beauty is relative to individuals, cultures, time periods and contexts, and that there are no universal criteria of beauty.

To perceive and experience aesthetics, the formal design elements namely form, colour, texture, light and shadow are fundamentally used to radiate the effect of any aesthetic environment. The methodical application and use of these five formal aesthetic design elements are of paramount importance to both architects and interior architects when they are designing different spaces. The use of these space enclosing elements portrays other aspects of design such as balance, scale, unity, rhythm, proportion, contrast and character. When used effectively by a professional architect or interior architect, these elements clearly manifest a glimpse of beauty and a touch of class in whatever space they design.

This research has taken the five formal aesthetic design elements and analysed them using two different subjects (a house and a restaurant). applied by either an architect and an interior architect. The use of statistical tools has facilitated some fundamental realizations regarding the different subjects based on a sample population.

- Architect and Interior architect on a house

When a house is chosen as the subject in question, the architect and interior architects share some views when it comes to 'colour' and 'form'. Both elements have an 89.8% and 97.8% positive correlation. This is evident because both architects and interior architects consider these two elements (form and colour) significantly important to portray the beauty of a house. Also there is a very strong correlation of 99.14% for both architects and interior architects to regard shadow as the element of least preference. Light and texture portray very weak correlations of 26.7% and 5.9% respectively in the rank of importance for designing a house.

- Architect and Interior architect on a restaurant

Conversely, when a restaurant is the subject, both the architect and the interior architect look upon the form, lighting and texture in a like manner. These high correlation coefficients of 91.9%, 87.8% and 83.2% shows strong correlation in the reasoning for both the architect and interior architect. There also is a 99.5% that shadow will be the element that both of them the least while colour is only weakly correlated with a 55.2% coefficient of correlation on the ranking of this element. From the information derived from the data collected, it shows that architects and interior architects think alike in most situations when considering the design of a restaurant.

6.1 Recommendations

This research has used the five formal aesthetic elements and analysed the way both architects and interior architects rank their preferences when they are designing either a house or a restaurant. Some plausible conclusions have been found regarding some correlation between architects and the interior architects.

Some aspects which were not taken into consideration and which may be open to further research in this area may be as follows:

Using a larger more diverse sample size for this research may be an alternative way to proceed. A cross section of different regions with varying climates in the different continents may be another interesting direction to relate such an analysis. It may be the case that the ranking of preferences will be synonymous in each region while there may be a marked difference when comparing these preferences for architects and interior architects of different regions.

This thesis takes into consideration only two subjects i.e. a house and a restaurant. Others interested in this field may investigate on prominent or iconic aesthetic architecture or architecture of similar and different functions such as museums, multi-purposed shopping malls, famous touristic sites etc to sample these preferences.

REFERENCES

(n.d.). Retrieved 2011from designbuzz: URL10: http://www.designbuzz.com/entry/the-three-graces-artistic-depiction-of-graceful-unity/

(n.d.). Retrieved 2011 from exinteriordesign: http://www.exinteriordesign.com/australia-highgate-hill-residence-by-richard-kirk-architect/

(n.d.). Retrieved 2011, from bluetouch: www.bluetouch.com

(n.d.). Retrieved 2011 from http://www.worqx.com/colour/colour_wheel.htm 1998-2009 Janet Lynn Ford

(n.d.). Retrieved 2011from look4 design:
http://www.look4design.co.uk/?gclid=CJa4lY7e1agCFYm-zAodoz0C8A

(n.d.). Retrieved from http://www.color.interiordezine.com/color-info/texture-pattern/

(2009). Retrieved 2010, from Color Wheel:
http://www.homeworkshop.com/2009/03/27/color-wheel-101/

(2010). Retrieved 2011, from terrableudesign:

http://terrableudesign.blogspot.com/2010/10/fun-with-shapes.html

(2011). Retrieved from modern houses: http://www.modernhousez.com/tag/architecture-

design/page/21

(2011). Retrieved 2011, from fabricarchitecturemag: fabricarchitecturemag.com

(2011). Retrieved 2011, from flickerphotoclub:

http://flickersphotoclub.blogspot.com/2006/11/architects-architectural-

(2011). Retrieved 2011, from http://www.mabeslor.com/the-klein-bottle-house-

irregular-shape-architecture/

(2011). Retrieved 2011, from

http://char.txa.cornell.edu/language/element/form/form.htm

(2011). Retrieved 2011, from http://brjdesigns.blogspot.com/p/chapter-2-form.html

(2011, aguest 1o). Retrieved 2011, from

http://en.wikipedia.org/wiki/Design_elements_and_principles

(2011). Retrieved from absolute astronomy:

http://www.absoluteastronomy.com/topics/Architecture

(2011). Retrieved 2011, from britannica:

http://www.britannica.com/EBchecked/topic/32876/architecture/31846/Form

(2011). Retrieved 2011, from http://hookedonhouses.net/2011/01/24/remember-when-

hildi-glued-straw-on-the-walls/

ACID. (n.d.). Retrieved 2011, from ACID:

http://www.asid.org/searchresults.htm?query=interior%20designer

Architeacher. (2002). (l. H. Agency, Producer, & The Center for the Study of Art and

Architecture) Retrieved 2011, from architeacher.org:

http://www.architeacher.org/aesthetics/archi-main.html

Basic color theory. (n.d.). Retrieved 2011, from http://www.photo-

africa.com/2009/08/basic-color-theory/

Becker, F., & coniglio, c. (1975). environment message: personalization and territory

humanitas.

Benya, J., & Karlen, M. (2004). Lighting Design Basics. new jersey: John wiley & sons, Inc.

Birren, f. (1989). light, color & environment. UK: ashgate publishing limited.

Brown, E. (2011). Retrieved 2011, from http://www.interiordesignquotes.com/texture-pattern.html

Bullard, l. (2006). aesthetic conserte barrier design. washington: national cooperative highway research program press.

Busch, D. D. (2008). David Busch's Quick Snap Guide to Lighting. Course Technology PTR.

Canadian Centre for Occupational Health & Safety. (1997-2011). (Canadian Centre for Occupational Health & Safety) Retrieved 2011, from http://www.ccohs.ca/

Capon. (1992). architectural theory. new jersy: john wiley & sones.

Ching, F. (2007). Form, Space, & Order (Vol. 3). new jersey: Jhon wiley & sons INc.

Color. (n.d.). Retrieved 2011, from www.nios.ac.in/srsec321newE/321-E-Lesson-30B.pdf

Colour and eye strain. (n.d.). Retrieved 2011, from http://www.sangrea.net/ohs_dbase/colour-color.htm

Davidson, M. (2008). Light and colour. Retrieved 2011, from http://micro.magnet.fsu.edu/primer/lightandcolour/index.html

Designing with Light. (n.d.). Retrieved from http://www.rsltg.com/images/Design_-_Light_in_Architecture_and_Psychology_of_Light.pdf

Disease, D. (2007). (proudly powered by WordPress Smashing) Retrieved 2011, from ARCHITECTURELOVER.COM: http://www.architecturelover.com/2011/04/pedestrian-bridge-from-the-future/

Elements and Principles of Design , (2011). (Elements and Principles of Design) .(W. I. UNIVERSITY, Producer) Retrieved 2011, from http://www.wiu.edu/art/courses/design/intro.htm

Elements of Aesthetic Design. (n.d.). Retrieved from

http://www.pwc.k12.nf.ca/wbutler/DesignTech/DT2109/elements_and_principles_of_re

sidential_design.htm

Faravar, n. (2010). aesthetic user preferences of formal aesthetic. gazimagusa cyprus:

Eastern Mediterranean university.

Ford, J. L. (1998-2009).

Ford, J. L. (1998-2009). color wheel. Retrieved 2010, from

http://www.worqx.com/color/color_wheel.htm

Ford, J. L. (1998-2009). worqx. Retrieved from Complementary Colors:

http://www.worqx.com/color/complements.htm

Form, shape and space . (2011). Retrieved 2011, from

http://webpages.charter.net/dennishinds/cabi103/form.htm

Franklin, J. (2010). Retrieved 2011, from Franklin. J (2010)

http://auburnpub.com/lifestyles/article_d9d0bf02-d276-11df-aa2b-

001cc4c03286.html?mode=story

Freebooknots.com. (2004-2011). (wiley, Producer) Retrieved 2011, from

http://www.freebooknotes.com/wiki/Aesthetic_relativism

Gorden, G. (2003). interior lighting. new jerecy: jhon wiely & sons.

Grimley, G., & Love, M. (2007). Colour, space and style. USA Rockport Publishers.

Hasse, f.-a. (n.d.). beauty and aesthetics meanings of an idea and concept of the senses.

Holgate, A. (n.d.). Aesthetic of built form. Retrieved 2011, from

http://home.vicnet.net.au/~aholgate/structdes/aobf/aobf_chap02.html

Holtage, A. (1992). Aesthetic of built form. oxford university press.

How to Design Your Own Home. (2009). Retrieved 2011, from http://www.design-your-own-house.com/design-elements

Itten. (2000,2001). the color company. Retrieved 2010, from itten's color contrasts:

http://www.colorwheelco.com/colortheory/ittenscontrasts.php

Japan-photo. (n.d.). Retrieved 2011from URL3: http://www.japan-photo.de/e-mo-j08.htm

Jefferis, & Madsen. (1986). Architectural drafting and design. USA: Thomson Delmar Learning.

Karlen, M., & Benya, J. (2004). creative homeowner press choosing a color scheme. new jersey: upper saddle river.

Katerina Maniaa, A. R. (2005). An experimental exploration of the relationship between subjective impressions of illumination and physical. elsevier .

korsmeyer, c. (2004). gender and aesthetics an introduction. 2.

Learn about Using Texture and Pattern with Colour. (2010). Retrieved from http://www.color.interiordezine.com/color-info/texture-pattern/

Lewitin, J. (2002-2006). eastern corner. (EasternCorner Inc) Retrieved from http://www.easterncorner.com/interior-design/Texture.htm

Mbah. (2011, aug 26). Retrieved 2011, from http://njowo.multiply.com/journal/item/288/Colors_bukan_kolor_celana_hlo

Med library. (2011). (member of CR healt net) Retrieved from

http://medlibrary.org/medwiki/Philosophy_of_Art

Miller, E. (2004, june 29). Retrieved from

http://users.rowan.edu/~millere/Introduction%20to%20Aesthetics.htm

Miller, e. (n.d.). aesthetic introduction.

Miller, E. (2004, june 29). aesthetic introduction. department of philosophy & religion .

Miller, e., & schlitt, j. (1985). interior space, design concept for personal needs. london:

preager publishe.

Modernhousez. (n.d.). Retrieved from http://www.modernhousez.com/tag/architecture-

design/page/21

Mollon, J. D. (2001). The Origins of Modern Color Science . Department of

Experimental Psychology University of Cambridge.

Mood lighting. (2009). Retrieved 2010, from www.invitinghome.com:

http://www.invitinghome.com/home_lighting/lighting-mood.htm

Morris, w. (n.d.). interior design quotes. Retrieved 2011from

http://www.interiordesignquotes.com/texture-pattern.html

Morris, W. (2011). texture, pattern,. Retrieved 2011, from William Morris texture,

pattern,(2011)] http://www.interior-design-tutor.net/interior-design-pattern.html

Morrow, V. (2008). Retrieved 2010, from Give Life to Your Rooms with Texture:

http://www.inoutdecor.com/DecoratingStyle/DC3.htm

R.Potter. (1856). the Nature and Properties of light. london: Walton and Maberly.

Salyan, G., & Thapa, S. (2000). Architectural and Construction data" Quezen city. JMC

Press.

Scharm, R. (2011). Retrieved 2011, from answers.com:

http://www.answers.com/topic/aesthetics

Scruton. (1979). the aesthetic of architecture . london: mathuen & co LTD.

Simonds, B. (n.d.). Lighting tips from the Masters. Retrieved 2011, from
http://bensimonds.com/2010/06/03/lighting-tips-from-the-masters/

stamatiadis. (2009). Qualifying the Benefits of Contest Sensitive Solution. washington:
Washington: National cooperative Highway research program Press.

Steinberger, P. J. (1993). The concept of political judgment. chicago: university of
chicago press.

stepbrightly. (2011). Retrieved 2011, from http://stepbrightly.com/2009/05/puma-retail-
brand-stepping-out-in-style-with-eco-architecture/)

Sullivan, L. H. (1947). Kindergarten chats and other writings. new york: wittenborn
schaltz Inc.

sullivan, l. h., & sullivan, l. (1896, march). the tall office building artistically considered
.

Texture. (n.d.). Retrieved from alanzian: http://alanzain.blogspot.com/2008/05/texture-
and-pattern.html

Texture. (2008, may 12). Retrieved from implyfurnishings:

http://www.simplyfurnishings.com/design_index/texture/texture.htm

Texture. (2011). Retrieved 2011, from http://www.interior-design-tutor.net/interior-

design-pattern.html

Texture and pattern. (2008, May 15). Retrieved 2010, from alanzian:

http://alanzain.blogspot.com/2008/05/texture-and-pattern.html

Texture in Interior Decorating. (2011). Retrieved 2011, from

http://www.invitinghome.com/Decorating_Ideas_Advice/Decorating_Textures.htm

The 7 Elements of Unity | Aesthetic Components of Design. (2010). Retrieved 2011,

from architecture-student: http://www.architecture-student.com/architecture/aesthetic-

components-design-unity-elements/

The Physics of Light and Color. (2010). Retrieved 2011, from microscopy:

http://www.olympusmicro.com/primer/lightandcolor/index.html

Veryzer, r. w. (1993). Esthetic respone and the influence of design prinviples on product preferences. Assosiation for consumer research, 20, 224-228.

Young, J. (2005). aesthetic: critrical concepts in philosophy. Canada: Routledge Press.