A Methodological Evaluation to the Usage of Colour on Living Spaces: Case of Saklı Kent Mass Housing, Famagusta

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ABSTRACT

Houses are physical building types that meet people's housing needs. The terms "housing" and "house" have different meanings. Building housing is a preliminary preparation for the establishment of home life. Nowadays, houses have become a finished product, ready for users. Due to this understanding, people settle in the houses and houses turn into home over time.

Especially due to the increasing housing need, Mass houses constructed by construction companies weren't designed for one person, but rather for an anonymous user. To make a house to become a home, users must be involved in the house's design and production process.

Houses provide opportunities for people to perform their vital activities as well as meeting their need for shelter. The main life activities in a houses are sitting, resting, sleeping, working, socializing, cooking, eating and cleaning. Areas where activities such as resting, sleeping, self-care, and working take place are private areas of users such as bedroom, study room, bathroom. The areas where activities such as living, socializing, cooking, eating take place are living spaces where the user shares and spends the most time with other houses and guests such as living room, dining room, and kitchen.

According to the researches, the colours used in the design of houses living spaces can affect the satisfaction of users as they create differences in perception. Perceptual effects such as sign effect, camouflage effect, readability effect, scale and distance effect can be created by using colour in the interior spaces. These effects cause users

to perceive the space as wider or narrower, higher or lower, closer or farther. The colours used in the interior spaces affect the perception exactly and are not easy to use. It is not possible to create the desired interior spaces perception without knowing the general characteristics of the colours. The colours used in the houses can be chosen by the expert (interior architect) to provide more accurate perceptual results and offer living spaces that will satisfy the user.

In this thesis, the colours used in the living spaces of mass housing designed for anonymous users are analyzed in depth. In the first part of the thesis, the problem is defined, the methods and limitations are expressed. In the second part, housing, housing types, mass housing, housing parts, and the interior components are defined using the information in the literature.

In the third chapter, colour mixtures, colour dimensions, colour theories, colour schemes, colour groups, factors affecting the quality of the colour, perception, perception types, the use of colour in the interior space and its effects on the perception of the interior space are defined using the information in the literature. In the chapter four, methods have been developed to determine the colours used in the houses living spaces in the study area and to examine the perceptions created by the colours in the interior spaces. The colours determined by this method are read through the analysis tables and the effects of colours on the perception of interior space are explained. The last part of the thesis includes the results and suggestions.

Keywords: Colour, Colour Perception, Living Spaces, Mass houses, Famagusta, North Cyprus

ÖZ

Konutlar insanların barınma ihtiyaçlarını karşılayan fiziksek yapı türleridir.” Konut” ve “ev” kavramları birbirinden farklı anlamlar taşır. Konut inşaa etmek, evsel yaşamın kurulması için bir ön hazırlıktır. Günümüzde konutlar, kullanıcılara bitmiş halde, hazır olarak sunulan bir ürün haline gelmiştir. Bu anlayıştan dolayı insanlar konuta sonradan yerleşir ve konutu zamanla evleştirir.

Özellikle artan barınma ihtiyacından dolayı inşaat şirketleri tarafından yapılan toplu konutlar, bir kişi için tasarlanmayıp, anonim bir kullanıcıya göre tasarlanır. Bir konutun evleştirilmesi için, kullanıcılar konutun tasarım ve üretim sürecine dahil edilmelidir.

Konutlar insanların barınma ihtiyacını karşılamasının yanısıra yaşamsal faaliyetlerini gerçekleştirmelerinede olanak sunar. Bir konutta yer alan başlıca yaşama faaliyetleri; oturma, dinlenme, uyuma, çalışma, sosyalleşme, yemek pişirme, yemek yeme ve temizliktir. Dinlenme, uyuma, temizlik ve çalışma gibi aktivitelerin gerçekleştiği alanlar, yatak odası, çalışma odası, banyo gibi konut kullanıcılarının özel alanlarıdır. Oturma, sosyalleşme, yemek pişirme, yemek yeme gibi aktivitelerin gerçekleştiği alanlar, oturma odası, yemek odası ve mutfak gibi kullanıcının diğer konut kullanıcıları ve misafirleri ile paylaştığı, en çok vakit geçirdiği yaşam alanlarıdır.

Araştırmalara göre konut yaşam alanlarının tasarımında kullanılan renkler, algı farklılıkları yarattığı için kullanıcıların memnuniyetini etkileyebilir. İç mekanda renk kullanılarak işaret etkisi, kamuflaj etkisi, okunabilirlik etkisi, ölçek ve mesafe etkisi gibi algısal etkiler yaratılabilir. Bu etkiler kullanıcıların mekanı olduğundan daha geniş

veya daha dar, daha yüksek veya daha alçak, daha yakın veya daha uzak gibi algılamasına yol açar. İç mekanda kullanılan renkler algıyı birebir etkiler ve kullanımı kolay değildir. Renklerin genel özellikleri bilinmeden, istenilen iç mekan algısını oluşturmak mümkün değildir. Konutlarda kullanılan renkler, bilirkişi tarafından seçilerek daha doğru algısal sonuçlar elde edilip, kullanıcıyı memnun edecek yaşam alanları sunabilir.

Bu tezde, anonim kullanıcılar için tasarlanan toplu konutların yaşam alanlarında kullanılan renkler derinlemesine analiz edilmektedir. Tezin ilk bölümünde sorun tanımlanmış, yöntem ve sınırlamalar ifade edilmiştir. İkinci bölümde konut, konut tipleri, toplu konut, konut bölümleri ve iç mekanı oluşturan bileşenler literatürdeki bilgiler kullanılarak tanımlanmıştır. Üçüncü bölümde renk karışımları, renk boyutları, renk teorileri, renk şemaları, renk grupları, rengin kalitesine etki eden faktörler, algı, algı çeşitleri, iç mekanda rengin kullanım yerleri ve rengin iç mekan algısına etkileri, literatürdeki bilgiler kullanılarak tanımlanmıştır. Dördüncü bölümde, çalışma alanındaki konut yaşam alanlarında kullanılan renkleri tespit etmek ve renklerin iç mekanda yarattığı algıları incelemek için yöntemler geliştirilmiştir. Bu yöntemle tespit edilen renkler analiz tabloları üzerinden okunarak, renklerin iç mekan algısına etkileri açıklanmıştır. Tezin son kısmı, sonuç ve önerileri içermektedir.

Anahtar Kelimeler: Renk, Renk Algısı, Yaşam Alanı, Toplu konut, Gazimağusa, Kuzey Kıbrıs

TO MY FAMILY

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Chapter 1

INTRODUCTION

1.1 Problem Statement of the Thesis

Houses are private living spaces where people spend most of their time. Individuals' dominant preference area for the feeling of comfort and happiness is their house due to stressful daily life routines. The design of houses interior and the colours used in the design directly affect the psychology and perception of the users.

Today, the houses are presented to the users prepared and complete. By purchasing a complete house, users start personalizing the house to live happier inside the house. The colour preferences of all "structural elements" and "furniture and fixtures" of the houses built by the construction company are made by the construction firm, regardless of the effects of colour on the interior perception. After the users start to use the house, they make the colour choices of furniture and fixtures according to their personal taste or fashion. However, colour is an indispensable element in the definition and perception of space. By using the colour, the desired visual and dimensional perceptions can be created in the interior spaces, allowing the space to be perceived wider or narrower, higher or lower, closer or farther.

Colours used in houses interior spaces should be chosen by the user who will live in that house and an interior architect who knows the effects of colours on the interior

spaces. The colour choices made randomly without knowing the effects of the colour on the interior space often cause chaos in the houses.

When the colour choices are chosen by the interior architect and the user while designing the houses, the areas where the users will live happily can be created by creating the desired visual and dimensional perceptions in the interior spaces.

1.2 Aim of the Thesis

Due to all the problems mentioned above, the study has several purposes. One of the objectives is to explain the importance of the colours used in the interior spaces of the houses by literature review and analysis. The first step to explain the importance of using colour in houses interiors is to summarize the existing theoretical information. This thesis aims to observed the effects of the colours used in the “structural elements” and "furniture and fixtures" of the analyzed houses living spaces on the visual and dimensional perception of the interior.

According to the literature review, effects such as sign effect, camouflage effect, readability, scale and distance effect can be created by using colour in the interior spaces. It is the main aim of this thesis to observe whether these effects are created consciously or unconsciously in the interiors analyzed. The use of colour in the interior spaces is very important and can cause chaos in the interior spaces when the colour is used unconsciously. For this reason, it is one of the aims of this thesis to reveal that randomly used colours in mass housing do not make sense in interior spaces and often create chaos.

1.3 Research Question of the Thesis

By using colour in the "structural elements" and "furniture and fixtures", which are the components of the interior spaces, changes in the perception of interior space can be created and the perception of the space can be changed.

Can effects such as "sign effect", "camouflage effect", "legibility effect", "scale and distance effect" be created using colour in the interior? If so, what needs to be done to create these effects? This question is the main question of the research. However, when designing the interiors of mass housing, the colour is chosen at the last stage according to anonymous users. To investigate whether colour should be included in the interior design at the last stage or in the design phase is another subject questioned within the subject of this research.

1.4 Research Method of the Thesis

In this thesis, qualitative research method and quantitative reseach method are used. Using the qualitative research method, the subject of housing and colour, books, articles, master's and Ph.D. thesis, internet resources were searched with literature search. Observation tables were created with the findings obtained from the literature. After observing the colours used in the living areas of Saklıkent Detached Mass housings in Tuzla, Famagusta, analyzes were made with the created tables. The findings obtained from the analysis were interpreted with numeric and percentage values on tables using the quantitative research method.

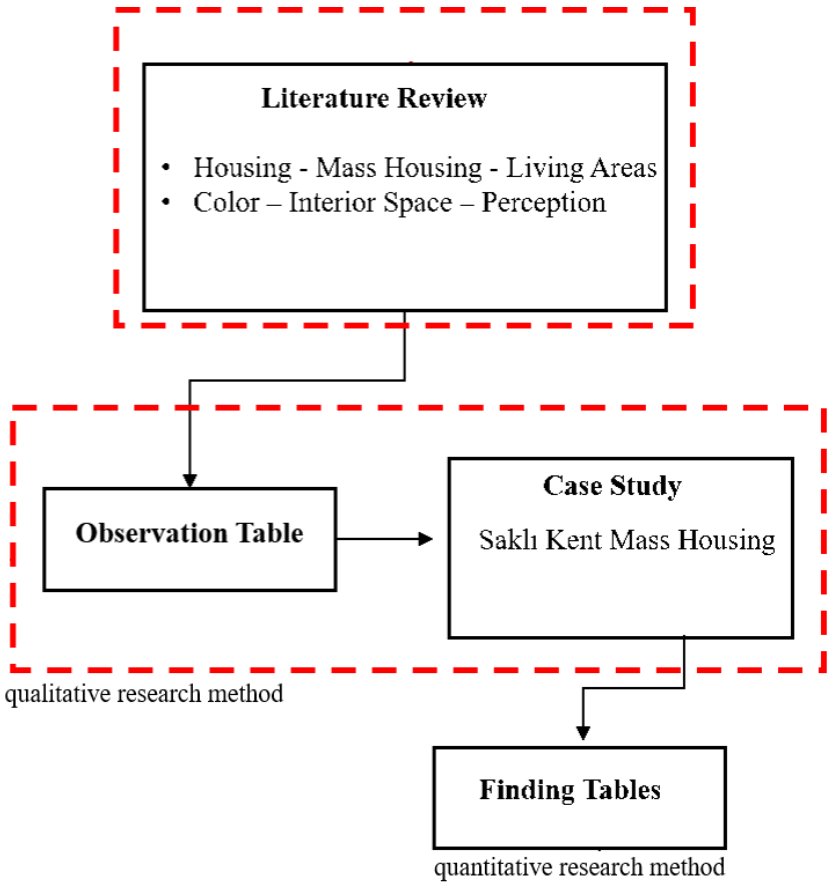


Figure 1: Research Method of the Thesis

1.5 Limitation of the Thesis

In this study, the use of colours in the living areas of mass housing such as living room, kitchen and dining rooms are examined and special areas such as bedrooms, bathrooms, dressing rooms, and study rooms are excluded. The colour analyzes were done with subtractive colours. Additive colours are excluded from the study. In addition, the colours in the interior are examined under two headings as the colour of “structural elements” and "furniture and fixtures". The colour of light is excluded from the study.

The reason for choosing the Saklı Kent Mass housing as the study area is that it is the newest Mass housing complex in Famagusta. The study includes living spaces of the Saklı Kent Detached Mass Houses. The flats are not within the scope of the study.

Chapter 2

HOUSING

The section includes the definition of housing, housing types and interior components are explained (see, Figure 2). By focusing on mass housing, living spaces of detached mass housing are defined.

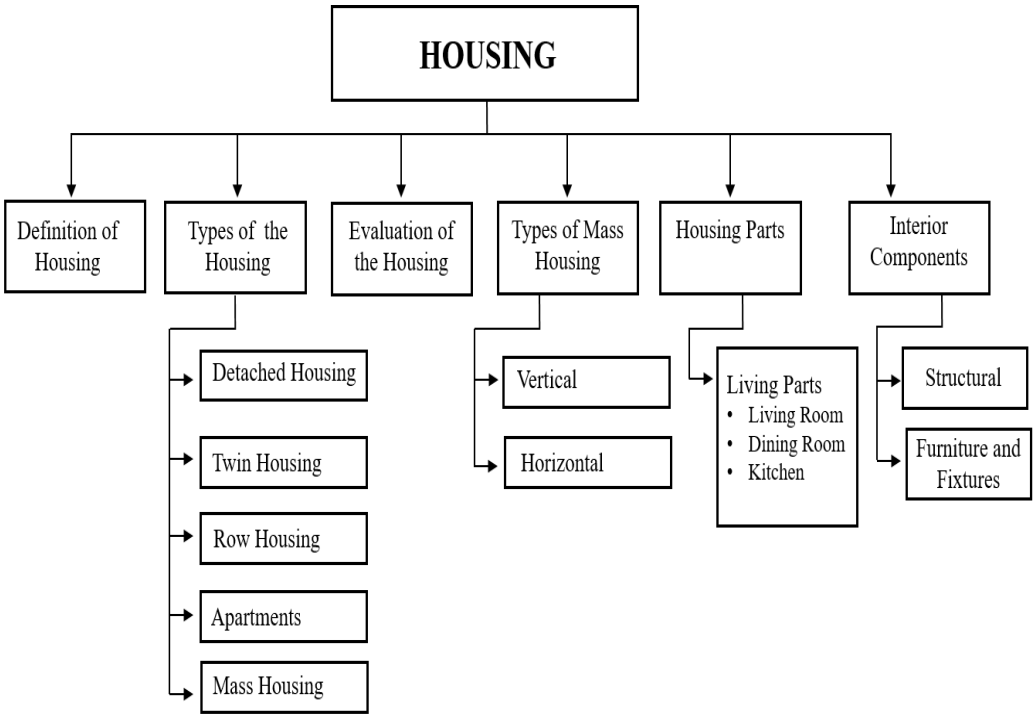


Figure 2: Summary for Chapter 2

2.1 Definition of Housing

Individuals' requirement for protection created the need for shelter although shelters were used only for protective purposes since ancient times the evolution of people both in social and economic terms created an increase in their shelter requirements in addition to security requirements and other vital requirements such as, eating, studying, and resting. These requirements change depending on the culture, region, and traditions of societies (Esentepe, 2013). The housing units are the living units where caves have been shaped according to the possibilities and conditions of the day, where people have sheltered and maintained their lives in order to protect themselves from dangerous animals, bad weather conditions such as extreme hot-cold and rain-snow (Sarıyel, 2001).

Doğan Hasol (1998) defines housing as a place where one or more people live. According to Stea; housing is a physical object specific to a particular culture as well as a part of social and economic organization (Stea, 1976).

According to Çakıroğlu, in many societies today, the family structure has turned from the crowded traditional family type to a nuclear family consisting only of parents and children. Houses are primarily a small family home and meet their needs (Sarıyel, 2001).

Nowadays, almost everyone's desire is to have a house for them, which is to suit their personal needs whether it is an apartment or a detached house. Individuals' daily life, habits, social relations have a significant effect on house choice. Housing is one of the most important means of shelter, which is one of the most important needs of people.

According to the Turkey Statistical Institute (TUIK), houses are defined as a building or part of a building with a detached door that opens directly onto the street, corridor or public place, allowing one or a group of people to live separately from other individuals, with a covered ceiling (Megep, 2011). Table 1 summarizes the descriptions of housing according to different perspectives.

Table 1: Definition of housing from different perceptive

Hasol, 1998	The place where many people reside.
Çakıroğlu, 1987	The place that houses the smallest family unit, that meets all their needs.
Stea, 1976	Part of the social and economic organization.
Sarıyel, 2001	Since ancient times, it is the place where people take refuge to protect themselves from some bad conditions.
Devlet istatisktik Enstitüsü(MEGEP), 2011	Enclosed living space.

↓

Houses are architectural structures that meet the changing needs of people and are shaped according to the social and economic conditions of the users.

2.2 Types of the Housing

There are different types of houses appropriate for people's economic conditions and lifestyles (Megep, 2011). These are; detached houses, twin houses, row houses, apartments and mass houses (see, Figure 3).

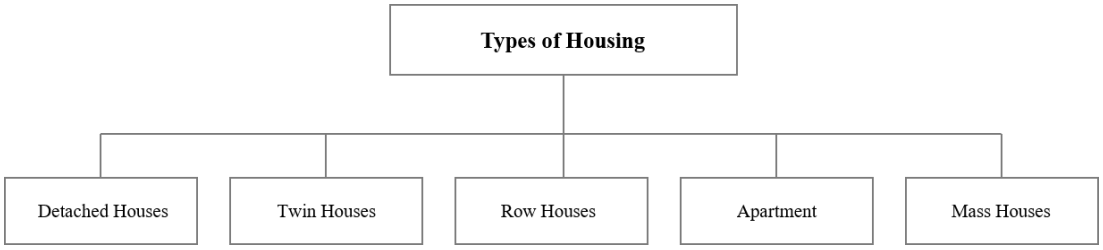


Figure 3: Types of Housing

2.2.1 Detached Houses

Detached houses are single-family housing unit that does not share a common wall with any other structure. Houses with one floor, two floors or more are examples of detached houses. Figure 4 shows an example of a two-storey detached house. Usually, there is a garage in each unit. Detached houses are more comfortable compared to other types of houses (Hoşkara, 1999).

Figure 4: Detached Houses (URL 1)

2.2.2 Twin Houses

Twin houses are formed by repeating the same or different plan types on both sides of a common wall, allowing the use of two different houses within a single plot. One of the twin houses can be positioned to the east and north, while the other can be positioned to the west and south. In other words, conditions can be positive in one house and negative in another. Figure 5 shows an example of a twin house (Esentepe, 2013).

Figure 5: Twin Houses (URL 2)

2.2.3 Row Houses

Row houses consist of adjacent apartments, which are side by side or on top of each other. Row houses came to the agenda with the Industrial Revolution in the early 19th century. With the industrial revolution, the construction of row houses started to be constructed in order to provide cheap and sufficient housing in response to the labor force concentrated in the cities and the need for the increasing population. In the same period, the row houses were built as upper-class houses. Row houses are economical due to many repetitions of the same type (Esentepe, 2013). Figure 6 shows example of row houses.

"Row houses can be positioned vertically or horizontally. Apartment blocks are connected vertically and detached houses are connected horizontally" (Hasol, 2008).

Figure 6: Row Houses (URL 3)

2.2.4 Apartments

Apartments are a type of housing that accommodates many families. There is common ownership in the apartments. The apartments vary in function and aesthetics depending on their location and the economic situation of the families. Apartment buildings can be either stand-alone or in a block site. Apartments can be planned as two, three, four or more apartments on one floor (Hasol, 2008). Figure 7 shows example of apartment.

Figure 7: Apartment (URL 4)

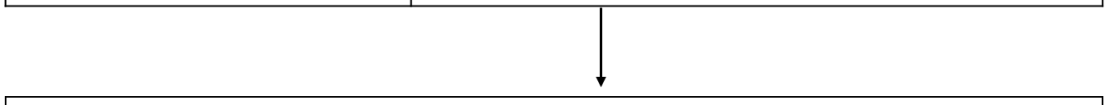
2.2.5 Mass Housing

Mass housing is a collective construction of multiple housing units that meets the needs of many families within the same houses area (Sarıyel, 2001). Mass housing is a general term, used for a large number of houses produced at one time (Bingöl, 2015). Mass housing has gained its real importance after the industrial revolution due to the rapid industrialization, immigration from village areas to cities has started and the enhancement in the working class has led to the need for a fast and cheap housing alternative. Mass housing settlements, which are rapidly developing and varying among countries in Europe, especially in England, have started to emerge.

With the emergence of mass housing in various typologies at that time, the modernist approaches in the press of the 20th century had a significant impact on the design of these houses. Much work has been done on how to design houses in general, including Le Corbusier and its Modulor (Yücel, 2008). Although mass housing has now targeted both low income and upper income groups, mass housing is the first to be seen as a large number of housing types for individuals and families with low economic income. Table 2 summarizes the descriptions of mass housing according to different perspectives.

Table 2: Definition of Mass Housing From Different Perceptive

Hasol, 1998	A large number of housing units combined with social and physical infrastructure.
Sarıyel, 2001	A mass-built form of many housing units that respond to the needs of many families.
Buğday, 1991	Rapid industrialization is an inexpensive alternative to housing that has emerged with the increase in the working class and migration.
Yücel, 2008	Type of housing built prior to the economic low-income families.



Mass housing, which emerged as an alternative for low-income users in order to prevent distorted urbanization due to reasons such as industrialization, population growth and migration after the beginning of the industrial revolution in history, is preferred by high income users since it is a housing type that meets many needs of users today.

2.3 Evaluation of Mass Housing

The population growth is considered to be the main factor in the construction of mass housing in the world. After the development of civilizations, human needs began to increase and population growth has caused the need for more housing. Mass housing has started to be built as a solution to the housing need problem which is dependent on population growth (Paralı, 1993). There have been three important events in history that initiated the construction of mass housing which are the Industrial Revolution and World Wars. The Industrial Revolution began in Western Europe in the second half of the eighteenth century. As a result of this technological development, new machines were invented. After these changes, people migrated from village areas to city areas to find a job. "Generally, the number of populations has increased in industrialized areas and the requirement for more housing has emerged" (Esentepe, 2013).

In industrialization areas of Europe in 1930, with the increase in the number of population, mass housing emerged. Mass housing developments were very economic for the structure that emerged as a solution to the shelter to meet the demand from a growing population. Several mass housing areas were built in the factories as standard materials production and technology progressed. Architects designed collective houses to provide shelter for the working class (Esentepe, 2013). Unite d'Habitation, whose architectural design belongs to Le Corbusier, is an example of solving the housing need of society (see, Figure 8).

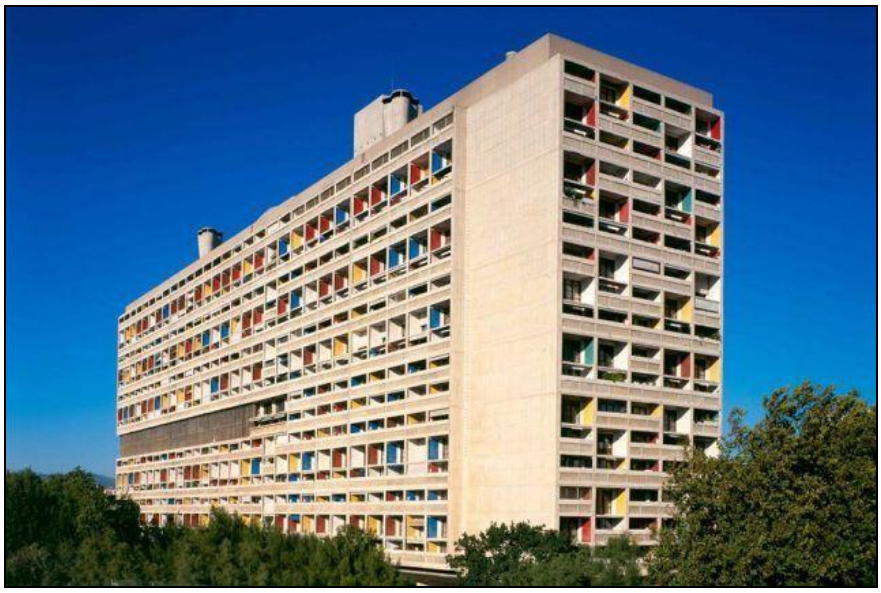


Figure 8: Le Corbusier, Unite d'Habitation (URL 5)

2.4 Type of the Mass Housing

Throughout history, mass housing typologies have been designed in different ways to meet user needs. A housing estate may consist of a combination of apartment houses or a combination of different houses. These housing types may have the same plan types or may have different plan types (Yücel, 2008).

According to Bingöl (2005); Typologies of mass housing can be classified as 'vertical mass housing' and 'horizontal mass housing' according to way the housing units are brought together horizontally and vertically (see, Figure 9).

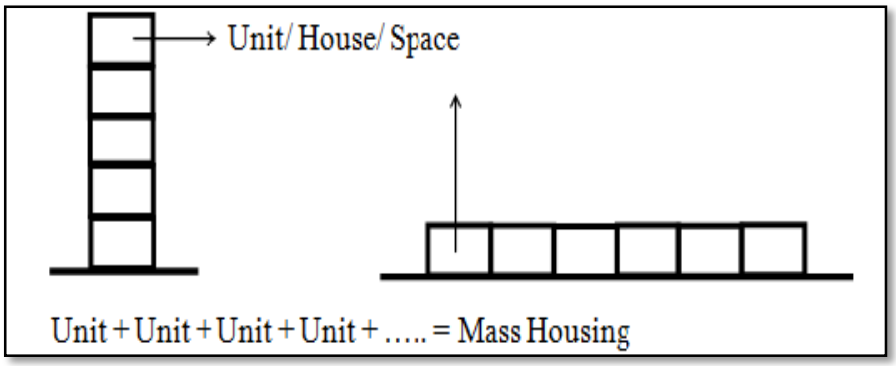


Figure 9: Units of Mass Housing (Esentepe, 2013)

2.5 Housing Parts

Houses are small buildings that have been used for protection purposes since the early ages, limited to a single area. In the present day, the houses consist of sections with different functions that are called the rooms of the houses. Rooms are separate areas where the user encounters their needs such as sleeping, eating, resting and socializing. Although the sizes of the houses change, the functions are the same. Houses that are perceived as a complex structure contain a fixed order and system. Users' needs and actions are similar. In a house, there are generally standard functions such as food, sleep, work, and cleaning. Different areas can be added to this standard function list and different areas can be created by expanding the living areas in the housing depending on the number of people living in the family (Uzel, 2001). According to Arcan and Evci (1999), housing sections are divided into 3 as common spaces, living spaces, and private spaces (See, figure 10).

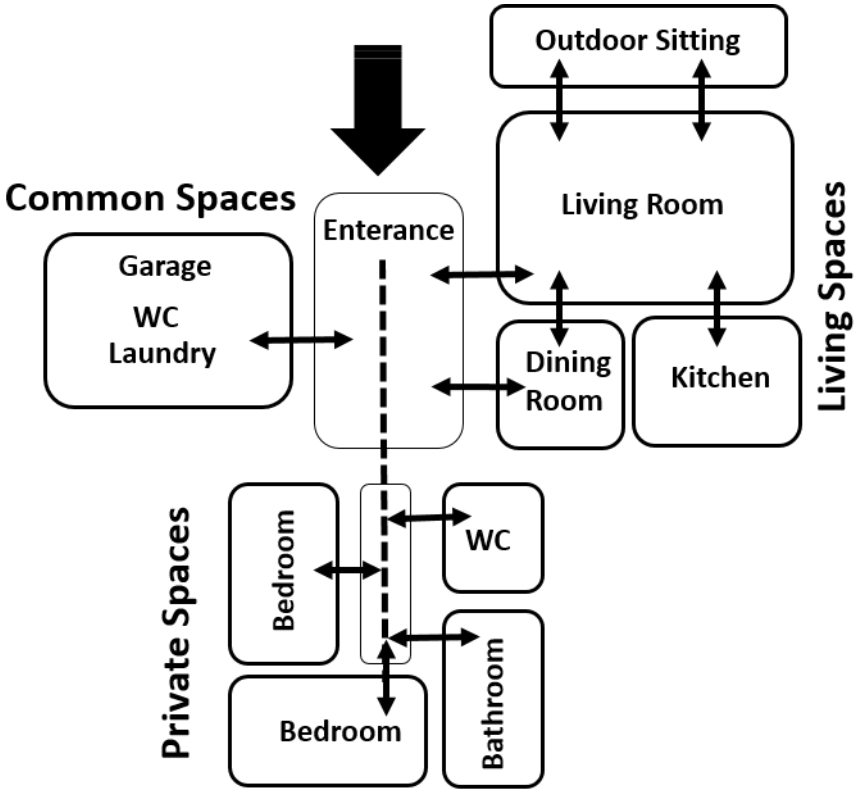


Figure 10: Functional Scheme of a House (Arcan & Evci, F, 1992)

Nowadays, due to contemporary living standards, houses interior spaces are divided as common spaces, living spaces, and private spaces. Each part includes a variety of spaces and each area contains a variety of actions and action areas (Yıldırım & Hacıbaloğlu, M, 2000).

As seen in figure 10, the living parts are the place where users spend their time together, perform their activities such as sitting, preparation of eat and eating and socialize. Living spaces include kitchen, dining room and living rooms. Common spaces include garage, wc, and laundry. The private spaces include the bedrooms where they meet the needs of rest and sleeping and the shower and, wc where they meet the cleaning needs (Dinçer, 2011). Within the scope of the thesis, the living room, dining rooms, and kitchens were defined.

2.5.1 Living Spaces

The contemporary housing concept includes living spaces defined as the spaces where housing users share with their guests and other housing users, spend time together, socialize, and perform actions such as sitting, resting and eating. Living spaces are made up of a living room, dining room, and kitchen that are used for daily seating, receiving guests and dining with guests. These are the most important spaces where most time is spent in the house, which is the mirror of the whole house as well as the people living in it (Yıldırım & Hacıbaloğlu, M, 2000).

2.5.1.1 Living Room

Rooms, which are reserved for the collective use of family members in houses, are called living rooms. Generally, in larger houses, larger rooms reserved for these functions are called saloons. Lounges are often considered to be both daily seating and receiving guests (Aydın, 2015).

In living room activities such as sitting, resting, reading, studying, entertainment, watching television, listening to music are done. In addition, in living spaces, there are furniture such as sofas, buffet, showcase, console, TV table, dining table, service table, chairs, coffee tables, and lamp shades (Hidayetoğlu, 2006).

Arcan and Evci (1992) made some determinations about the location and arrangement of living spaces in the housing. These are;

• The living space should be able to respond to changing needs depending on time.

• In adjoining houses, the living space should not be designed adjacent to the bedroom of the neighboring houses.

• In the event that an outsider guest arrives at the house, the guest should be allowed to reach the living area before moving to the private areas of the house.

• Be directly related to the entrance of the house; there should be a direct connection to the places such as balconies and terraces that open to the outside.

When the living space is considered in itself;

• Seating elements should be set in a way that individuals can see each other easily.

• The main circulation areas within the space must pass outside the seating group.

• Adequate cleaning areas should be left at the edges of walls and windows.

• Activities such as television viewing and landscape viewing should also be considered in the fixtures arrangement (Aydın, 2015).

2.5.1.2 Dining Room

It is the dining area of the house where family members come together, entertain their guests and socialize at the same time. In addition to the act of eating, this section is used by individuals for their daily conversation with each other and for their leisure activities according to their interests. These days, there is not much space in the houses, specially reserved as a dining room. This place is mostly located in large square meters. Eating is usually carried out in the kitchen, and when the guest arrives, it is carried out with accessories located in the hall reserved for food (Aydın, 2015).

One of the most important points in the arrangement of eating places is its relationship with the kitchen. It is recommended that the distance between the dining area and the kitchen is no more than 3.5m. The dining area, living space, entrance hall and outside terrace should be directly related to the balcony. Since the eating action areas are also open areas of the houses like the living houses action area, there is also a chat relationship with individuals coming from outside the houses - before and after meals. Therefore, it is useful if the dining and living areas are directly related areas or spaces.

In this way, the transition from the dining area to the living area before and after the meal will be ensured by the passage of the guests between the two volumes without entering the private areas of the house (Arcan & Evci, F, 1992).

2.5.1.3 Kitchen

In its most general definition, the kitchen is the place where the food is cooked. The organization of the space of the kitchens, although it changes from culture to culture, has always maintained its importance. A kitchen is a place that starts with the storage of all the necessary ingredients for food and then includes the functions of preparation, eating, and washing (Sak, 2014). The actions in the kitchen are mainly divided into six main groups (see, Figure 11). These include preparation, cooking, serving, eating, washing and storing. These action spaces divided into six main groups also contain different actions within themselves (Baytın, 1980).

PREPARATION • Solving • Paring • Cleaning • Cutting • Weighing • Mixing	**COOKING** • Baking in the oven • Decoction • Frying • Grill	**SERVICE** • Keeping food warm • Preparing dinner sets • Filling the plates
EATING • Preparing the table • Eating • Picking up the table	**WASHING** • Collecting dishes • Waste disposal • Wash-rinse • Drying	**STORAGE** • Storing foods • Storing Tableware • Storing service teams • Storage of electrical appliances • Storing cleaning agents

Figure 11: Actions of the Kitchen (Arcan & Evci, F, 1992)

As can be seen in figure 12, the kitchen is a place with various actions. In order for all these actions to take place with minimum energy and as soon as possible, the kitchen equipment needs to be positioned in an order. For all these functions in kitchens, different fixtures elements can be placed in a variety of ways to suit different users. The kitchens are classified according to their shape and location within the housing.

The kitchens classified as I type, L type, U type, Corridor type according to the planning in the house are named as open working, closed working and eating kitchen (Sak, 2014). It is scientifically determined how many times the user travels between the workplaces during the daily work of the kitchen and when the densities of the road and transportation are sorted according to the density level, it is seen that the first is between the stove and the counter, the second is between the refrigerator and the preparation table, and the third is between the stove and the refrigerator (Arcan & Evci, F, 1992). Accordingly, a study triangle has been put forward that will provide the best results in time (see, Figure 12).

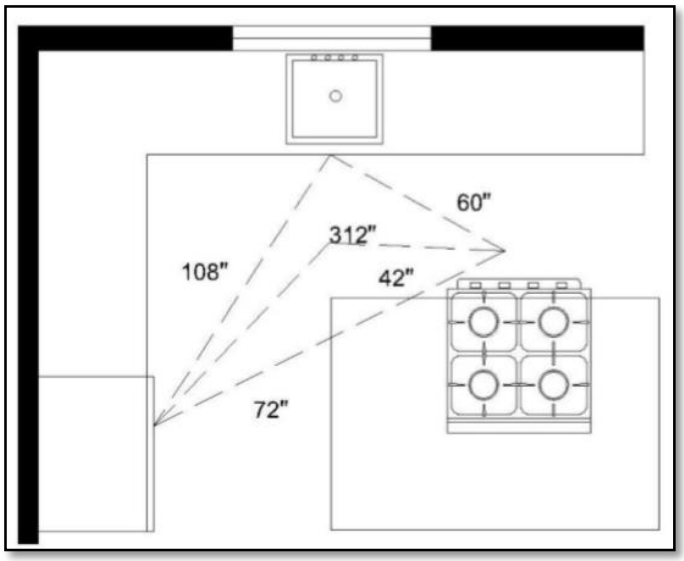


Figure 12: Triangle of the study in the kitchen (Arcan & Evci, F, 1992)

The actions in the kitchen are more functional for the user when they are ordered as seen in this working triangle. In working triangle shortest distance between the refrigerator, the cooking area and the sink is the shortest walking distance (Arcan & Evci, F, 1992). This is a work order that should be taken primarily when designing a kitchen (Sak, 2014).

2.6 Interior Components

The components that create the interior can be analyzed in two groups as “structural elements” and "furniture and fixtures". Structural components are stable and often play a role in establish and limits the interior (see, Figure 13). Furniture and fixtures are elements that vary according to the needs and requirements of the user. The way they come together depends on the components of the structural area and the user needs (Özdemir, Ural, & Gür, 1991).

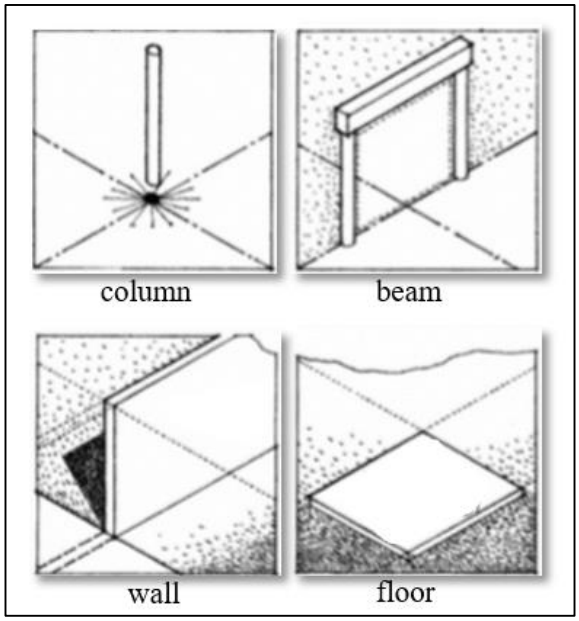


Figure 13: Interior Structural Components (Arcan & Evci, F, 1992)

2.6.1 Interior Structural Components

The structural components in the interior are floor, wall, column, beam, stairs, windows and doors (Kurak Açıcı, 2015).

- **Floor**

Sözen and Tanyeli describe the floor as “the surface separating the floors in buildings and the upper face of this surface” (Sözen & Tanyeli, 1994).

According to Hasol, the flooring is a part that separates the surfaces from each other. The general name of any material coated on the floor surface that is walked on a space is also called floor covering. Parquet, tile, mosaic, ceramic, carpet, etc. is a floor covering (Hasol, 2008). Floor coverings are the basis of the room and therefore affect the entire design of the space both physically and visually. Floor coverings can be durable, hard, smooth, smooth or fluffy and soft, carpet-shaped. Floor coverings are very important in the construction and decoration of a house (Kurak Açıcı, 2015).

- **Wall**

Sözen and Tanyeli define the wall as a divisor element which usually has a carrier function in buildings. Wall can be made by knitting or pouring methods, or it can be produced prefabricated or by applying a coating on a wooden structure (Sözen & Tanyeli, 1994). Hasol defines the wall as vertical divider made with stone, brick, briquette, adobe and similar materials da. Wood and similar materials can be made with the walls that can be easily dismantled divider wall is called (Hasol, 2008).

According to Heidegger, wall is defining a hard, rigid and impermeable concreteness (Çolak, 2004). According to Ching, the wall is any of the upright constructions that offer a continuous surface, or it is the area of protection, dividing and separating (Ching, 2016).

In addition to being used as wall bearing elements, it is also used to divide the space, protect it from external influences and feel safe. Partition walls are the kind of walls that are discussed in this study since they assume the task of dividing and designing the interior spaces of the buildings. The role and function of walls in spaces have changed over the centuries. The first and most important protection and partition

functions of the walls have changed gradually and the walls have started to be used more in interior design. Using different colours and materials on the walls, the perception of the interior can be changed (Kurak Açıcı, 2015).

- **Column**

Sözen and Tanyeli column, "made of reinforced concrete or steel, vertical, structural element" is defined as. If a column is made of stone or marble, it is called a column (Sözen & Tanyeli, 1994).

According to Hasol, the column is the “column under the influence of forces parallel to its length”. Columns are generally vertical bearing elements that transfer effects from beams or slabs to other columns or foundations. The column is usually used for reinforced concrete columns (Hasol, 2008).

- **Beam**

According to Sözen and Tanyeli, the beam is defined as "flooring or ceiling bearing wood, metal or reinforced concrete made of horizontal construction elements" (Sözen & Tanyeli, 1994).

In addition to being used as beams, it can assume different roles in order to add aesthetic value to space, to determine the status of the space, to make the space better perceived and to connect or separate spaces. According to the use of beams (decorative or carrier), which is thought to have a negative effect on the visual aspect, it can play a very effective role in the fiction of the space and be perceived very aesthetically.

- **Stair**

According to Sözen and Tanyeli, the stair defines as, two levels of different levels of joining the step as a structural element (Sözen & Tanyeli, 1994). According to Hasol, the ladder is the way to go up (Hasol, 2008). Stairs can be raised between two walls or they can be designed as an independent wall or limited to one side of the wall. The ladder can also be limited to columns or be carriers.

- **Window**

Sözen and Tanyeli defines the window as an opening or hole made to give light and air to an interior (Sözen & Tanyeli, 1994).

According to Hasol, the window is 'the opening made of glass and joinery on the walls to see the outside, to get air and light (Hasol, 2008).

Windows are very important for housing; it can be said that the eyes of the house. In addition to giving personality and style to the house, windows are important as an attribute of the house to the outside world. Windows allow air, light, and landscapes to enter the interior (Kalınkara, 2001).

Windows are functionally designed by considering factors such as cold-hot, sun-rain. Window is an important element that connects indoor and outdoor spaces. it provides natural lighting of the interior and makes you feel how time passes. A place without windows is unthinkable. The window opens the interior to the outside and increases the visual impact. The windows are very effective in organizing space. Space is designed and organized by considering windows. Space is inevitably arranged by the effect of windows.

- **Door**

Sözen and Tanyeli describe the door as openness used to enter and exit a place (Sözen & Tanyeli, 1994). According to Hasol, door is the wall or partition space that is passed when entering and exiting a place. Door generally consists of wings and casing (Hasol, 2008). Doors provide access from one room to another with light, sound, smell, wind, hot-cold and entry-exit to the house and control circulation and are part of the architectural structure that can be designed to be heavy-duty, wood-foldable on both sides, foldable type made of wood, bamboo or woven material or sliding glass of transparent glass.

In the interior, the doors can be rearranged for different functions;

● Doors can be lifted to create large spaces.

● In order to ensure circulation, doors that are not required or that are not suitable for the space can be closed. Thus, the interior can be given a flowing and simple appearance.

● The doors can be planned in such a way that they cannot be attracted from the structural point of view.

● It can create a different effect with the use of decorative objects such as doors, coloured glass panels and stained glass.

● Doors can be designed as metal, plastic, wood or glass plates.

● The doors can make their presence felt by forming border elements with their forms, textures and colours on the wall surface.

Doors direct indoor traffic. Short and direct access is the most suitable for the interior. If there is more than one door in a room and the room is small, the doors should be planned close together. Thus, the loss required for circulation within the space can be

prevented. Furniture placed between the doors prevents passage and creates an uncomfortable usage area (Kurak Açıcı, 2015).

2.6.2 Furnitures and Fixtures

Interior fixtures elements are items that can be added later, depending on the needs and wishes of the user. The way they come together depends on the components of the structural space, the needs of the user and the function of the rooms (see, Figure 14). Furniture and fixtures in the space often come together in a connected system (Kurak Açıcı, 2015). For example, the presence of a chair brings a sofa and a coffee table and the presence of a table brings chairs together.

The accessories define the function of the area in which they are grouped together (Pile & Gura, 2005). In this thesis, interior furniture and fixtures are examined in 3 groups as furniture, accessories, and textiles.

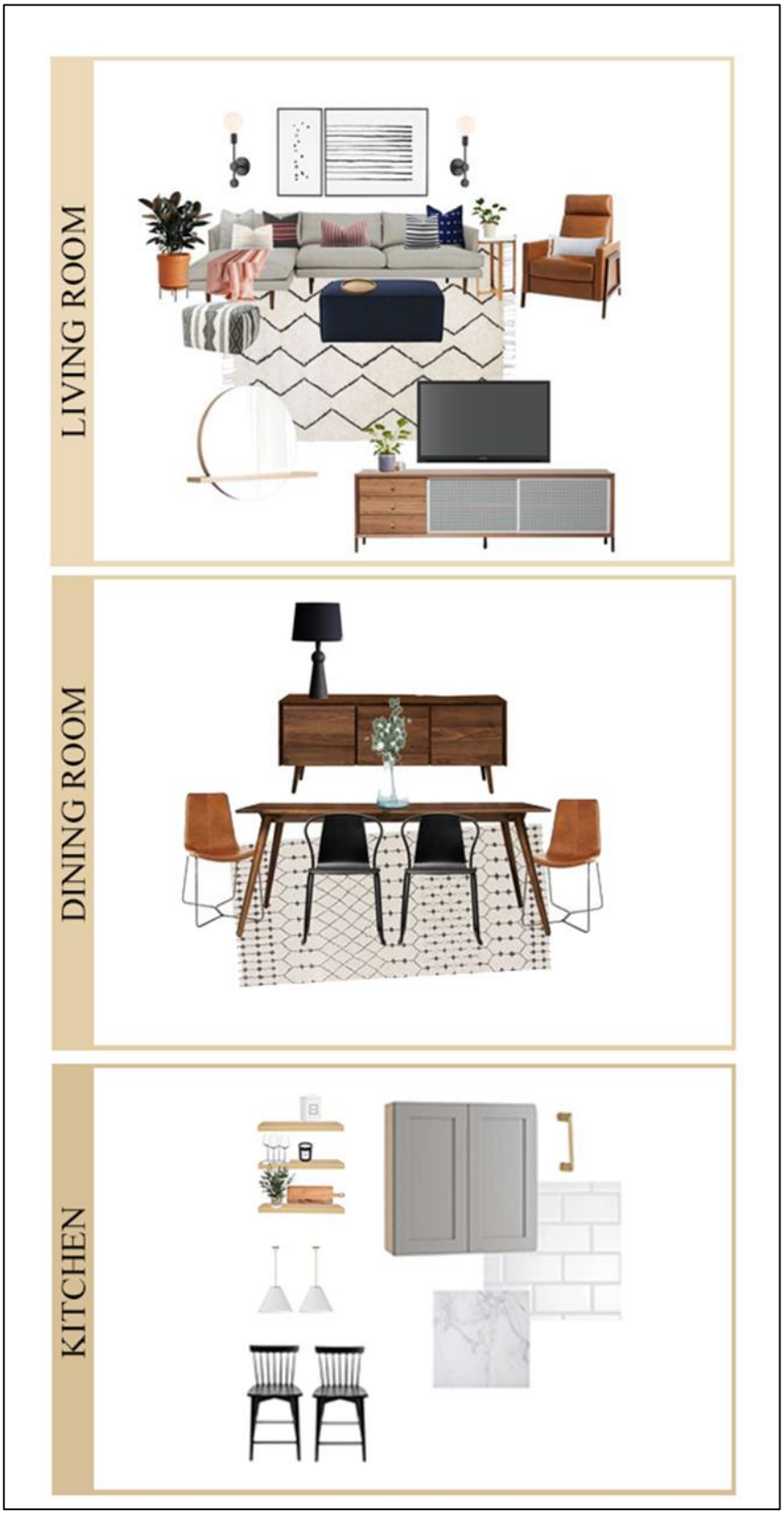


Figure 14: Interior Furnitures and Fixtures

- **Furniture**

The concept of furniture can be mentioned since the early ages when people started to meet their spatial life needs with tools and objects. Furniture has changed in similar to the living situation of the societies, their understanding of civilization and their aesthetic views. Different sources define the word furniture in the following ways. Furniture is the general name given to sitting, eating, working, portable goods. Furniture is the common name given to fixed and portable goods used in all areas of everyday life, such as sitting, sleeping, eating, traveling, resting, working and placing and protecting all kinds of goods (Ching, 2016).

Furniture is an element that is placed to provide the interior order of the space and meets various requirements, so it is closely related to the interior design of the house. According to Ching (2007), it acts as an intermediary between furniture, architecture and space users, providing the transition between interior and individual on a form and scale basis, making these spaces useful by adding comfort and usefulness to interior activities. Structural components such as walls, floors, columns, doors, windows as well as fixtures and accessories play a very effective role in creating spaces.

Furniture can be defined as the elements and systems aiming to meet the basic physical needs of the people such as sitting, sleeping, working and storing in a safe and comfortable way (Üst, 2015).

- **Accessory**

Accessories are generally referred to as the name given to the whole of movable, various sized objects, which can also be used as complementary objects in interiors. Even if the interior is specially designed, they may look unfinished and cold when they are without accessories. Even if they look beautiful, they may not reflect a style.

The use of the selected accessories, current trends, the style of the room, personal tastes, accumulated objects and the size of the available space must be considered (Uz, 2019).

- **Textile**

In interior design, term of the textile refers to any woven or textile product. Textile are a significant element for interior design. Furniture, carpets, curtains, armchairs, puffs, pillows are used in almost all the accessories used in the interior textile. The materials used in home textiles vary in design and usage areas in parallel with the continuous development (Nielson, 2007).

In daily life, textiles made of different materials for different purposes are preferred. Most woven textiles are made to be worn on the body or to touch the body through the furniture on which it is coated. For this reason, the fabric is first and foremost appeal to the sense of touch with its material (Nielson, 2007).

Textiles are produced from various raw materials in various structures and textures for various purposes. The textiles can be grouped into 3 main groups as natural fibers, artificial fibers, and mixed fibers. The most important feature of the textiles used in home textiles is that they are used according to the type of product to be made. Such

as making a set of duvet cover textiles or upholstery thick textiles, such as the living room set. Textile selection is made according to the place to be used in home textile. It is also important that the textile conforms to the model specification and the use characteristics of the product. In home textiles, natural fibers and artificial fibers are used separately or mixed. Especially if they will be used as upholstery and drapery, durability and stain repellency, flammability and colour fastness, etc. fabric should be chosen according to the specifications (Digital, 2015).

Chapter 3

COLOUR – INTERIOR SPACE AND PERCEPTION RELATIONSHIP

"Colour is the keyboard, the eyes are the harmonies, the soul is the piano with many strings. The artist is the hand that plays, touching one key or another, to cause vibrations in the soul" (Wassily Kandinsky, 1912).

3.1 Colour Basics

Colour is one of the most significant factors of interior design. The current chapter focuses on general information such as basic colour schemes, colour groups, theoretical knowledge and properties of colour, and also on the combination of colour and perception in the interior (see, Figure 15).

The sensation that occurs in the human eye together with the reflection of light objects is called colour. The effect of light in our eyes, which is reflected in the light after it hits objects and substances, is called colour (Dağlı, Güley, & Paşaoğulları , 2012).

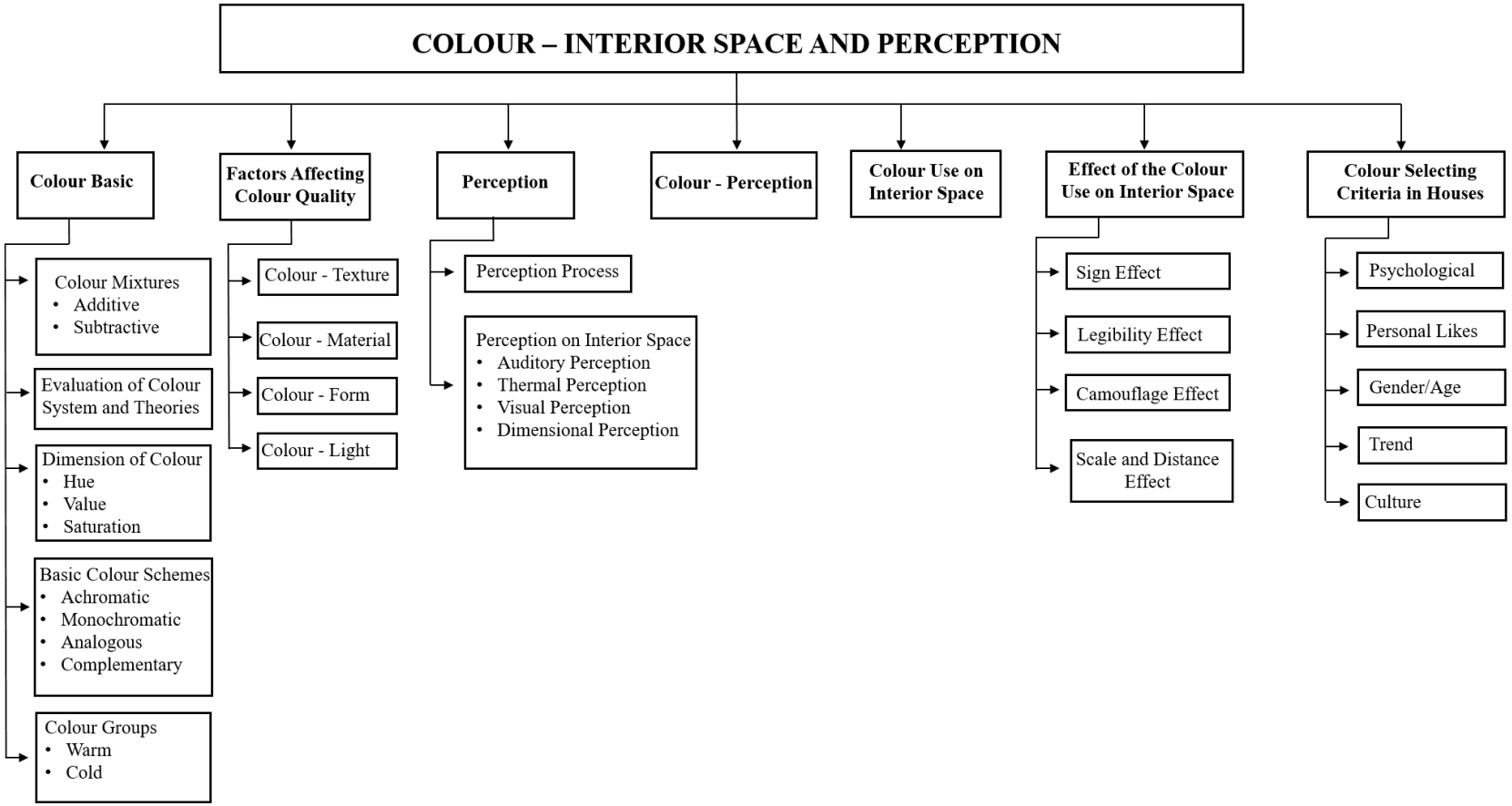


Figure 15: Colour - Interior Space and Perception

“Colour is a perception that of occurs only inside your brain “ (Miller, 1997). The sensation that occurs in our minds after the light hits the objects and reaches the human eye is called colour. Colour can be seen with light. In other words, when a colour is detected, what it actually received is light (Polat, 2012).

When there is no light, all objects are colourless so they are not visible (Robert F. Ladau, 1989). When there is no light, objects do not have their own colour. What we perceive as colour is the reflection of light on objects (Per, 2012).

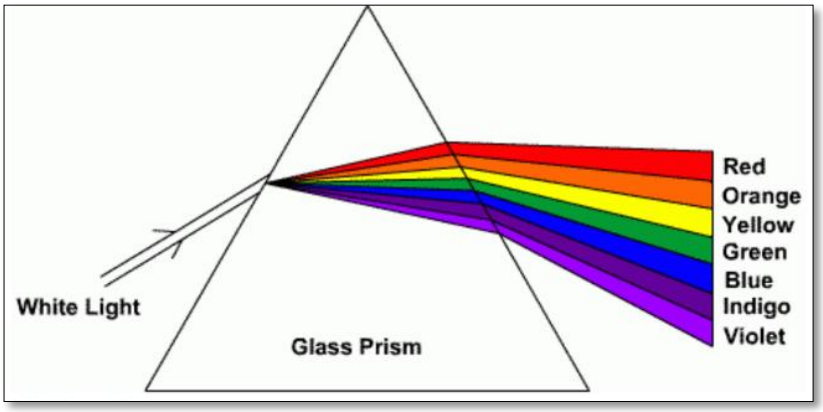


Figure 16: Colour Spectrum (URL 6)

In the 17th century, British physicist Isaac Newton allowed sunlight to penetrate through a small hole in a dark room. Then, it passed this light through a triangular glass prism and separated it into seven colours just like the rainbow (see, Figure 16). Newton called these colours, the "sun spectrum' 'which were reflected on the white screen as a result of the experiment (Per, 2012).

When sunlight is directed through a prism, different wavelengths separate from each other and turn into 7 colours. “The most visible colours to the eye are, violet, indigo (violet-blue), cyan (blue, green), green, yellow, orange and red” (Miller, 1997). “Each

colour passing through the prism has its own unique wavelength. Red with the longest wavelength, purple with the shortest wavelength" (Per, 2012).

Throughout history, many studies have been made by people with many different occupations and theories have been put forward. Colour does not mean the same to everyone. According to designer Mary C. Miller, "Colour is a perception that occurs only inside your brain". However, Goethe describes colour in his book "Teaching Colour" as follows: "Colour is the most striking and understandable, the most basic phenomenon of nature, meaning the organ of the eye and thus addressing the senses in the general valid nature formulas".

For an artist, colour is pigment, for a physiologist a characteristic of radiant energy for a psychologist is the perception that emerges in the mind for any human being; can be an object or light property (Per, 2012). Table 3 summarizes the descriptions of colour according to different perspectives (see, Table 3).

Table 3: Definition of colour from different perceptive

Tasarımın içindeki sırlar, 2012	Sensation in our eyes.
Miller, 1997	Perception that of occurs only inside your brain.
Loude, 1989	There is no color when there is no light.
Per, 2012	Reflection of light on objects.
Gothe	The most basic phenomenon that can be seen, comprehended, meaning the eye organ.

After the impact of light on objects, the effect that is left in our eyes by reflecting is called color. When there is no light, we cannot perceive colors.

3.1.1 Colour Mixtures

Colour mixtures are examined under two main headings as additive (RGB) and subtractive (CMYK) mixtures. Light colour mixtures is RGB, material colour mixtures are CMYK.

- **Additive Mixture (RGB)**

They are the colours obtained as a result of the mixing of light colours with each other. It is used in areas where TV screens and computer monitors are used to produce colour images.

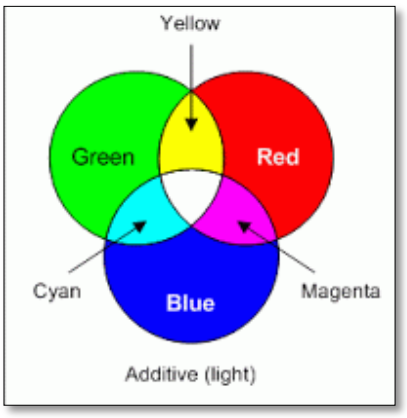


Figure 17: Additive colour (URL 7)

The colours are formed in this system; red, green and blue (see, Figure 17). When three primary colours are mixed in equal amounts, white colour is obtained (see, Figure 18). Both colour combinations in this colour system create complementary colours (Megep, 2011).

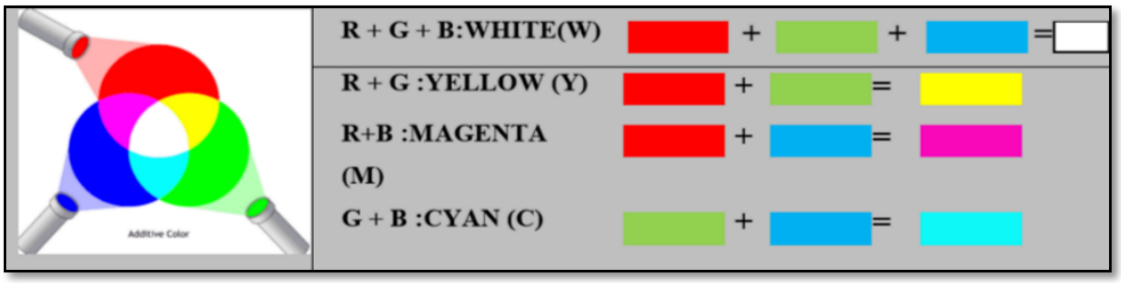


Figure 18: Primary and secondary additive colour (Güley, 2014)

- **Subtractive Mixture (CMYK)**

In this system, many intermediate colours and colour images are obtained by mixing intermediate colours. The main colours are cyan, yellow and magenta. K in CMYK does not mean black. The letter K stands for key and is used as the key colour (see, Figure 19).

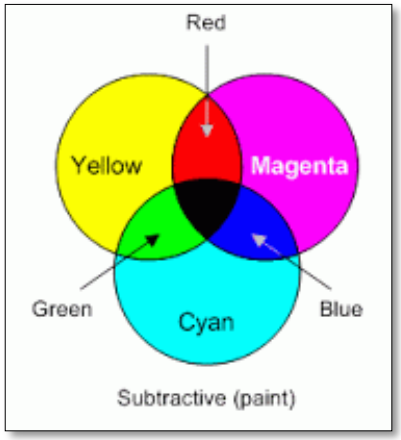


Figure 19: Subtractive Colour (URL7)

In this colour mixing system, black colour can be obtained from 3 primary colour mixtures but not a complete black colour (see, Figure 19). In addition, white colour is never obtained in this system (Güley, 2014).

In addition, many colours can be obtained in this system by mixing the primary colours with intermediate colours (Güley, 2014; Henderson, 2007).

Figure 20: Primary and secondary subtractive colour (Güley, 2014)

As a summary of all this information, additive mixture and subtractive mixture are summarized in the table below (see, Figure 21).

Evaluation	Additive Mixture			Subtractive Mixture		
Creation	Additive colour mixture is the creation of colour by mixing colours of *light*.			Subtractive colour mixture is the creation of colour by mixing colours of *pigments*.		
Primary colours	Red	Green	Blue	Cyan	Yellow	Magenta
Secondary colours	Yellow	Magenta	Cyan	Orange	Green	Violet
Mix all						

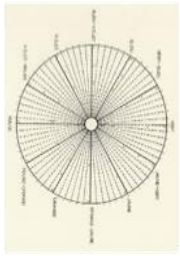
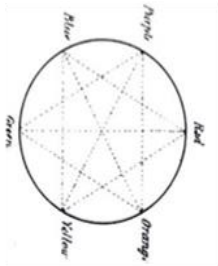
Figure 21: Evaluation of Additive and Subtractive Colour Mixture (Güley, 2014)

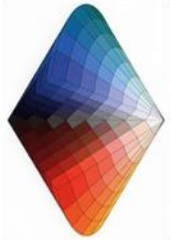
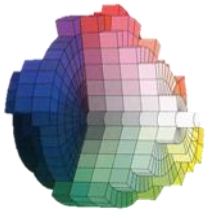
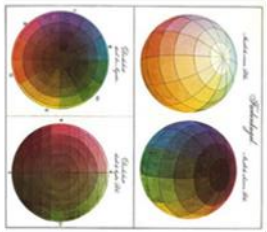
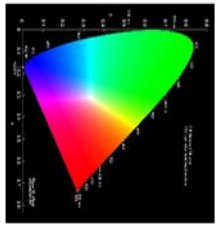
3.1.2 Evaluation of Colour Theories

Throughout history, many civilizations and scientists have developed colour theories to describe what they see in the world they live in and to understand how we see them. For example, different people such as physicists, chemists, painters, writers, poets have dealt with the colour in different ways and produced different theories (Güley, 2014).

In this study, the colour theory studies from the history to the present day have been selected and the different colour systems of the scientists from different disciplines have been examined. Colour theory studies conducted throughout history are summarized in table 4.

Table 4: Evaluation of Colour System and Theory (Güley, 2014)

Michel Eugene Chevreul	Walfgrang von Goethe	Moses Harris	Sir Isaac Newton	Leonardo da Vinci	
18 th-19th century (1786 – 1889)	18 th-19th century (1749 – 1832)	18th century (1766-1785)	17th century (1786 – 1889)	17th century	**PERİOD**
Chemist	Poet	Entomologist	Physicist	Artist and Scientist	**OCCUPATION**
Psychology	Psychology	Nature	Nature	Nature	**STARTING POINT OF COLOUR WHEEL**
Additive colour mixture	Additive colour mixture	Subractive colour mixture	Additive colour mixture- Physics of colour	Subractive colour mixture – Perception of colour	**INTEREST**
					**COLOUR WHEEL**
Red Blue Yellow	Red Blue Yellow	Red Blue Yellow	Red Blue Yellow + Green Orange Indigo Violet	Red Blue Yellow + Green White Black	**PRIMARY COLOURS**

Colour Wheel in nowadays	**Itten**	**Wilhelm Ostwald**	**Albert Munsell**	**Philipp Otto Runge**	**CIE**
Nowadays	19 th-20th century (1888 – 1967)	19 th-20th century (1853 – 1932)	19 th-20th century (1858 – 1918)	18 th-19th century (1777 – 1810)	20th century (1931)
---	Teacher	Chemist	Chemist	Painter	International Commission
---	Psychoanalysis	Geometrical colour model	Chemical	Chemical (3D colour)	Standardization
Subractive colour mixture	Subractive colour mixture	Subractive colour mixture	Subractive colour mixture	Subractive colour mixture	Additive colour mixture
					
Red Yellow Blue	Yellow Red Blue	Red Yellow Blue	Red Yellow Blue Green Green Purple	Green Yellow Blue	Blue Green Red

3.1.3 Dimension of Colour

Colour cannot be defined without knowing the basic concepts of colours. In order to define the colours seen, some concepts need to be known. Saying the name of the colour is not enough to identify it. By simply saying red, it is not possible to define what kind of red means that colour. In order to be able to describe exactly the red colour, the properties of that red should be known according to the pigment origin (Göler, 2009). Basic concepts that identification of colours clearly are; hue, value, and saturation (see, Figure 22).

While such colour definitions can be used without problems in daily life, they have led to misunderstandings in the areas of professional colour usage because they do not provide a definite colour definition and have emerged as a problem. In the middle of the 19th century, scientists and artists developed various ways to provide precise colour definition (Güley, 2014);(Miller, 2001).

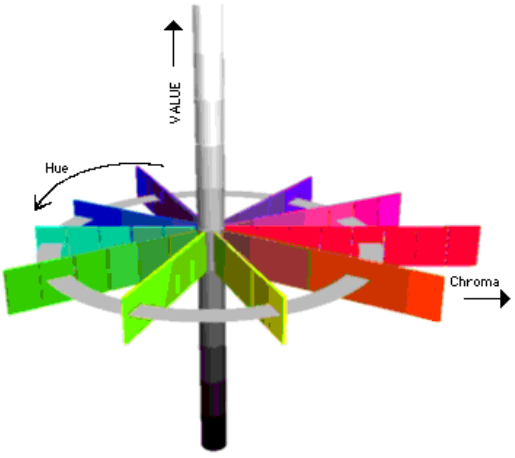


Figure 22: Dimension of Colour (URL 8)

- **HUE**

Hue is the characteristic of the names of colours (see, Figure 23). When yellow and blue colours are mixed, a green colour is obtained and this is called a change of colour hue (Smith, 2019). Colours, yellow, red, blue, green, such as the name of the feature that defines the tone is called. When the basic colour tones are mixed with the neighboring colour tones, new colour tones are obtained. When naming this tint, the dominant tint is written first. For example; Blue-green, red, orange (Güley, 2014).

Figure 23: Basic Hue (URL 9)

- **VALUE**

Value is the property that indicates the degree of "lightness" and "darkness" of a colour tone (see, Figure 24). That shows the degree of blending of colours with black and white. If more black is added to a colour, the darker the colour will become, if more white is added, the lighter the colour will become. Physically, the brightness / darkness of the colour are related to the wavelength of the light source (Sema, 2006).

Figure 24: Example of colour values (URL 10)

- **SATURATION / CHROMA/INTENSTY**

Saturation, chroma, and intensity refers to the degree of intensity of colours, that is, the brightness or opacity of a colour, or the strength or weakness of the colour (see, Figure 25). As chroma increases, colour appears more vivid, more intense (Smith, 2019). Expressed as density, brightness, and vitality is actually the saturation of that colour. Saturation decreases or increases according to the amount of gray in the colour. The saturation of the colour decreases as you approach the gray circle in the colour circle. The bright and vibrant colour of a colour indicates the saturation of that colour. Unsaturated colours have a matte appearance, close to white. Maximum saturated colours do not contain white (Sema, 2006).

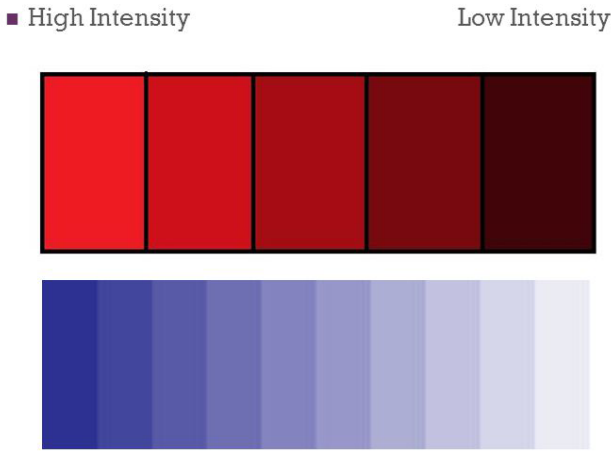


Figure 25: Example of Colour Intensity (URL 11)

3.1.4 Colour Schemes

Colour theories use some colour schemes that include colour harmony. These colour schemes include combinations of different colour harmonies.

The colour schemes, mostly used today are as follow;

- **Achromatic Colour Schemes**

Achromatic colours consist of gray, which is a mixture of black and white, and these colours do not have chromatic properties (see, Figure 26). These colours consist of degrees of lightness and darkness between white and black (Briggs, 2007). Achromatic colours contain no colour and generally include shades of black, white and gray (Güley, 2014).

Figure 26: Achromatic Colour Schemes (URL 12)

- **Monochromatic Colour Schemes**

Monochromatic colour scheme is a chart that contains a single colour and its shades (see, Figure 27). Using any tint, it can be mixed with achromatic colours that are white, black, and gray. The colour obtained from this mixture is a light or dark tone of the colour used (Güley, 2014).

Figure 27: Monochromatic Colour Schemes (URL 13)

- **Analogous Colour Schemes**

Analogous colours schemes are colour harmonies that occur by using adjacent colours in the colour circle (see, Figure 28). The side-by-side analogous colours look stronger and create an unobtrusive harmony. Each of these colours contains the shades of each other. Usually one of the selected colours is the primary colour and the other is a supporting colour. For example; Yellow-green, yellow and yellow-orange form an analog colour harmony (Per, 2012).

Figure 28: Analogous Colour Schemes (URL 14)

- **Complementary Colours**

Complementary colour schemes are colours that are against to each other's in the colour circle. For example; Yellow and purple, red and green (Özsavaş, 2016). The complementary colour schemes group also has different colour combination schemes. These schemes are as follows;

-Direct complementary

The colours that lie directly in the colour circle are complementary colours (see, Figure 29). When these colours are mixed with each other, they lose their effect and form a gray colour (Gopinath, 2005).

Figure 29: Comlementary Colour Schemes (URL 15)

-Double Complementary (Tetradic-rectangle)

In tetradic colour scheme (see, Figure 30), rectangle on the wheel using two complementary colour pairs is created (Gopinath, 2005).

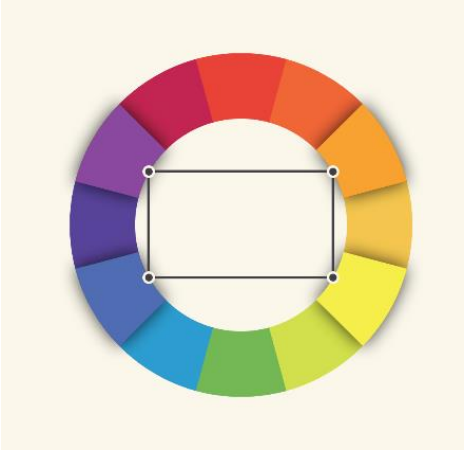


Figure 30: Double Complementary Colour Schemes (URL 16)

-Split Complementary

Split complementary colour scheme (see, Figure 31) uses the essence colour and the two colours next to its complement. Using this colour creates a 'Y' shape in the colour circle (Gopinath, 2005).

Figure 31: Split Complementary Colour Schemes (URL 17)

-Triadic Complementary

Triadic colour is a colour harmony formed by using 3 colours that form a triadic equal distance on the circle (see, Figure 32). Triadic complementary colour is mostly preferred colour scheme as it includes most harmonious colours (Gopinath, 2005).

Triadic complementary colour combination has less contrast than the complementary colour combination but a more harmonious colour combination is achieved. Blue-purple, yellow-green and red-orange form a triple colour harmony. The primary colours of blue, yellow and red also form a triple colour harmony (Göler, 2009).

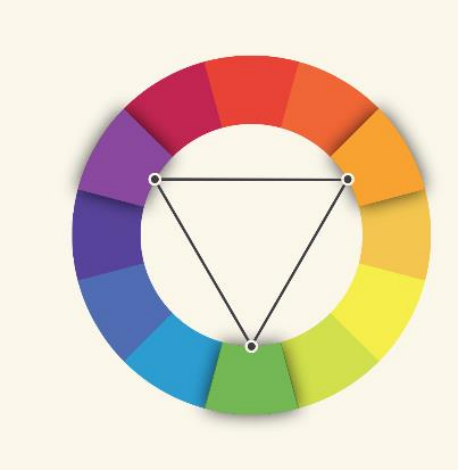


Figure 32: Triadic Complementary Colour Schemes (URL 18)

3.1.5 Colour Groups

- **Warm - Cold colour groups**

When colour scheme is divided into half, half warm colours and half cold colours occur (see, Figure 33).

"The side containing the colours orange, red-orange, yellow, yellow-orange, red, red-orange and red-purple is called warm colours, and the side containing green, yellow-green, blue, violet and blue-violet colours is called cold colours" (Yamaner, 2001).

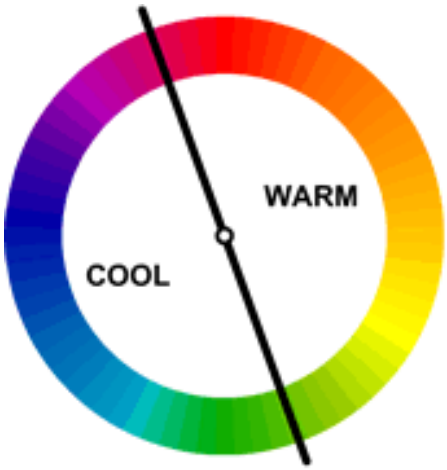


Figure 33: Cool and Warm Colour Group (URL 19)

3.2 Factors Affecting Colour Quality

Texture, material and light can affect colour perception. The use of these elements alone has no positive or negative effect on spaces. The combination of different materials, forms, textures and light elements leads to a different perception of the same colours (Arslan, 2015).

3.2.1 Colour – Texture

Texture should not be omitted when talking about colour-space association. Every object in nature has its own unique texture. The texture of a surface is one of the determinants of the colour of that surface. Bodies in nature exist is different textual forms such as; wet, dry, rough, smooth. An object having textural differences; colour applied to surfaces with different textures is perceived differently on each surface (Yamaner, 2001).

Referring to Katz's film colour experiments, Gibson states that if the texture of the surface is not seen, the surface colour is perceived as a thin membrane, so that surface colours cannot be distinguished from the texture (Göler, 2009).

According to Göler (2009), because hard textured surfaces are perceived more recently and soft textured surfaces are perceived further away, they create different dimensional effects in the space they are used.

The light striking very smooth surfaces is reflected back before it is able to influence inside. Only the specular reflection results in light. In this reflection the colour of the material is not visible at that moment. Window glass is a good example. The polished metals reflect the mirror reflection and the colour of any other object next to it. Shiny fabrics such as brass pots, copper panels, satin are examples of this (Yamaner, 2001).

The light impinging on the uneven surfaces and recesses on the rough surfaces reflects in various directions. The colour of such a diffused reflective surface is clearly apparent from any point. The most absorbing materials are carpeted, velvety, fury surfaces such as fur (Özdemir, Ural, & Gür, 1991). As the recesses and protrusions of the surface grow, the colour is darkened and saturation decreases due to indentations and protrusions create small shade areas among them and as a result of the light reflected from the surface hitting the surfaces of these recesses, a large part of it cannot be reflected to the outside. Therefore, sometimes a dark but smooth surface may reflect more light than a light coloured surface with indented protrusion. The surface can give distinct views from various directions when the tissue shows a certain repetition (Göler, 2009).

3.2.2 Colour – Material

Colour-material relationship is another issue to be considered in colour applications. Materials are one of the determining factors in the perception of the colour of the surfaces.

The use of the same colours on different materials has different effects. Regardless of the colour, that colour has different effects on a separate, wooden surface on a velvet fabric (Yamaner, 2001).

3.2.3 Colour – Form

Form, objects, external appearance; in metaphysics, it is the effective, decisive principle that is distinguished from matter, the hidden principle of an object (Bayık, 2001). The first issue perceived in the interior is the three-dimensional forms that exist in the void whereas, the interior itself is a three-dimensional form. Perception of this three-dimensional form of space is realized through the perception of the elements that make up the space. Dimensions of space are perceived as width, depth and height (Göler, 2009).

3.2.4 Colour – Light

Light is a physical energy that affects the eye and causes the appearance of objects and colours. Human perception of light, like all other types of perception, is not only based on physical stimulation, it is also directly related to the subjective state of the sensory organ and the observer (Aydıntan, 2001); (Arslan, 2015).

The smaller the light source, or the more parallel the light beam emits, the more light it gives, the shadows become sharper and darker. Conversely, the larger the light source or the more common the light it emits, the less contrast it gives, the more transparent the shadows are (Göler, 2009).

High lighting contrast is achieved by using bright and direct light. In this way, the resulting white and black orientate certain illuminated areas to form a strong graphic structure. Since the side of an object illuminated by direct light is brightly illuminated

on one side and dark shaded on the other side, the contrast on the object is high and thus gives a strong sense of volume.

Perception of colour and that in space; the direction and rate of light arrival vary with the structure of the light and the reflection of the light source. Light sources divided to two as natural light and artificial light. The only source to be shown as a natural light source is the sun. Figure 34 shows an interior illuminated by natural light.

Figure 34: Examples of day light in interior (URL 20)

When choosing colours indoors, the direction of light and different colour effects should be considered. A warm colour can have a negative effect with sunlight. Natural light is insufficient and artificial light is needed in interior spaces which are designed without considering sun direction and position. The use of artificial light is seen in different places and types in different regional or general terms from surfaces such as ceilings and walls (see, Figure 35). Natural and artificial lighting should be used well for colour to compose the right effect in the space and to be perceived correctly (Özdemir, 2005).

Figure 35: Examples of Artificial Lighting (Göler, 2009).

3.3 Perception

Perception is the process of interpreting the knowledge and experiences that people have obtained from their surroundings with the help of their senses. People can add meaning to their lives and continue their lives with the information they collect from their environment (Göler, 2009).

People constantly interact with space they are in and perceive the space they are in through their senses. These perceptions are interpreted using knowledge and experience. Most of the perception is composed of visual perception. The concepts of form, colour, material, texture, and light are design elements that affect visual perception in space (Arslan, 2015).

3.3.1 Perception Process

Perception is a sensation formed by the combination of many factors that are formed within a long process through paying attention on various objects or through environmental or internal stimulus that is perceived and results with a response and is followed by individual's interpretation (Dinçer, 2011).

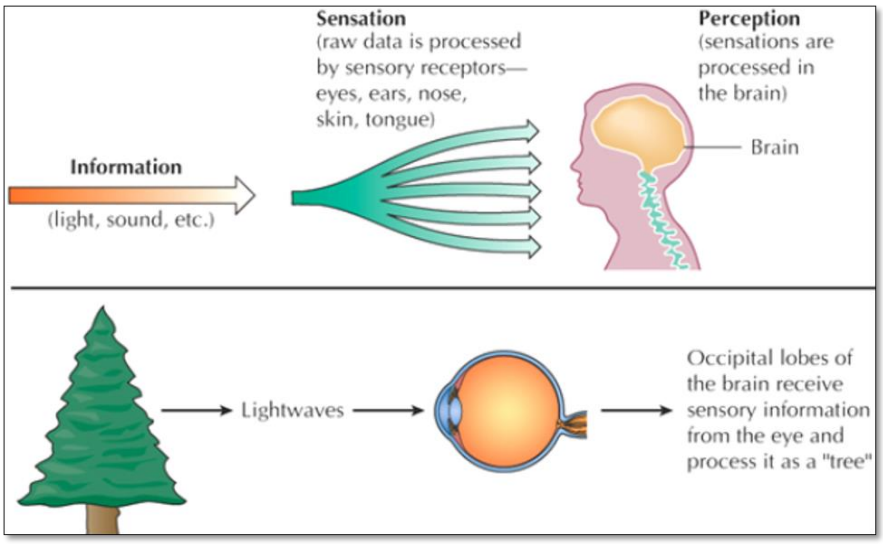


Figure 36: Process of Perception (URL 21)

The stimulus of vision is light. It is a sensation that enables us to see colour by affecting the eye. It is a perception that we realize what light is, where it comes from, what colour is colour (see, Figure 36). Therefore, we can evaluate visual perception through light and colour (Asar, 2013). “Visual perception requires three things: light, eye and brain” (Dinçer, 2011).

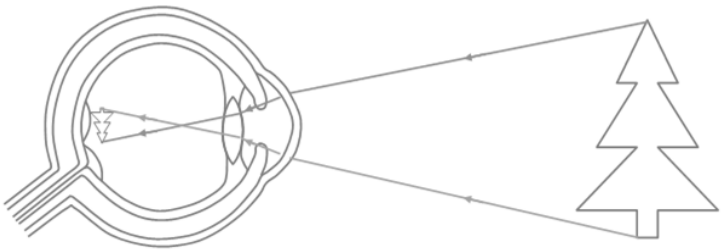


Figure 37: Visual event (URL 22)

For an object to be visible, the object must be a light source or be illuminated by the light source. When the object is viewed, the rays of light emitted or reflected from the object first come into the transparent layer and are broken here. The rays broken in the transparent layer come to the pupil. The pupil adjusts the amount of light coming through the iris and the rays pass through the pupil to the eyepiece (see, Figure 37).

The rays are broken again in the eye lens and fall onto the yellow spot on the web layer (Göler, 2009). The ray down on the yellow spot forms an inverted image and the image created here is taken by the visual sensory cells and transferred to the visual sensory nerves. The visual feeling tempers transmit the image to the visual sense center of the brain. In the visual sense center, information about the image is evaluated, the opposite image is corrected and the visual event occurs.

Our perception system allows us to easily identify objects within a space by locating and separating objects within a space, shape-ground relationship, a grouping of objects, distance-proximity relationships. A perception is a physical event as well as a psychological event (Atlı, 2010).

Visual perception is also a subject of curiosity and research. Wertheimer, Rubin, and Gestalt psychologists have developed many theories by examining visual perception. Gestalt psychologists, in particular, have created a number of theory systems related to visual perception.

"What we see depends on the ground and other parts of the whole. It is different from the sum of all its constituent parts; the whole is composed of parts in relation to each other" (Dinçer, 2011).

3.3.2 Perception on Interior Space

People are in constant interaction with the space they exist and they try to comprehend the dimensions, form, colour, and texture of the space with these stimulants (Aydıntan, 2001).

3.3.2.1 Auditory Perception

Auditory space perception has different effects according to reverberation time. In addition, the auditory perception gives the sense of being in a small or large area with a long reverberation time, be attached to on the form characteristics of the internal surfaces. The fact that the materials (see, Figure 38) used in the formation of the space have different swallowing properties due to their textural characteristics is a factor affecting the auditory perception (Göler, 2009).

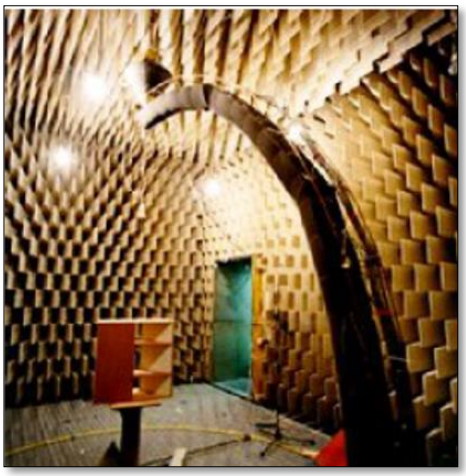


Figure 38: Auditory Perception (Göler, 2009)

The obstacles to the sound emitted in the air, just like in light, are formed by shadows. This is called an acoustic shadow. The obstacles placed outside, especially between the traffic roads and the area that needs to be protected from noise, protect this area from noise by leaving it in acoustic shadow. In some factories and workshops, this method is applied indoors (Aslan, Aslan, & Atik, 2015).

3.3.2.2 Thermal Perception

Red-yellow colour of fire, warm colour connotation; The blue-green colour of the ice creates the perception of cold colour, which causes differences in the visual perception of the space, causing the division of the colour into ‘warm’ and ‘cold’ colours. "Colours also acting an role in predicting the time we spend in the space" (Gezer, 2012).

For example, it was found that the time spent in a place dominated by warm colours was more predictable, but in a place coloured with cool colours, the estimated time was less than the actual time. People in a place where red, pink, orange, etc. are used in a level called Pseudo-Psychological level, they feel that place is warmer than it really is (see, Figure 39). This phenomenon can be used as an economic factor in heating systems (Göler, 2009).

Figure 39: Thermal Perception (Göler, 2009)

It has been determined by experiments that some textural features have a warmer or cooler effect due to the perception of the space as a whole. “A smooth textured surface creates a cold effect, while a rough surface creates a warm effect” (Göler, 2009). In

general, it can be said that warm colours are perceived closer than cold colours and cold colours are perceived far away in warm colours (Özdemir, 2005).

3.3.2.3 Visual Perception

"It can be described as the way the brain interprets what the eyes see" (Akdeniz, 1982). An object without texture appears to be abstract. The object with a particular texture can be easily distinguished from other objects by creating a more concrete expression and can be detected and perceived. (Hesselggren, 1977). Another factor affecting the visual perception of the tissue is distance. The distance reduces the visible texture of the surface, giving a soft effect to a hard-looking texture (Göler, 2009).

When different coloured surfaces come together according to some colour principles such as gestalt, the perception of the whole becomes easier and aesthetic (Arslan, 2015).

- **Theory of Gestalt**

Gestalt is a German word and has meanings such as form, shape and form. Gestalt theory deals with perceptual organization laws (Koç & Bulut, 2014).

"Gestalt is a concept which means the posture and functioning of the meaningful whole formed by the designed parts. There are also abbreviators as form of meaning" (Arslan, 2015). At the beginning of the twentieth century, this principle was brought to the agenda at a psychology school in Germany. The word Gestalt is of German origin and has no equivalent in Turkish. The closest meaning form, pattern, order, to question the concepts of context and the relationship between these concepts. Gestalt theories are a theory that examines human perception and perception-related knowing processes and focuses on visual perception and visual organization of space. According to the

researches made on how the human eye organized visual experiences, it was found that Gestalt principles can ve examined in 3 groups: “Figure and ground, similarity, proximity, common fate and good continuity, closure, area, and symmetry” (Koç & Bulut, 2014).

In order to express how the visual organization is established, Gestalt theorists have subdivided this theory into subheadings as shape-ground relationship, perceptual grouping principle, similarity-separation principle, completion principle, and continuity principle (Asar, 2013).

- **Figure and Ground Principle**

Figure and Ground describe the elements that come together to form a space or an image, and how they come together. The shape is more dominant can be called backdrop background. “Looking at the most famous ‘Figure and Ground’ image (see, Figure 40), we see a white vase on a black background and two black faces on a white background. After defining the figure, the rest of the image becomes the ground. Camouflage is probably a distortion of the figure-ground, the dominant shape is very similar to the seemingly lost ground” (Peters, 2019) **.**

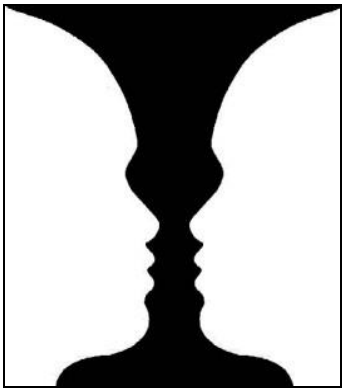


Figure 40: Figure and Ground (URL 23)

- **Similarity Principle**

In the similarity principle, similar objects are perceived as a part of the group by the viewer. This effect can be used to create a single image from multiple individual elements (see, Figure 41). This effect can be used to create a single image from multiple individual elements (Özsavaş, 2016). “Similarity between different elements; shape, colour, size, texture or proportions” (Koç & Bulut, 2014).

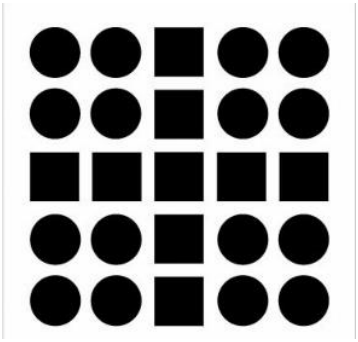


Figure 41: Similarity (URL 24)

- **Proximity Principle**

Sensory stimuli (shapes, objects, sounds, etc.) are perceived as a whole by being grouped according to their proximity to each other in terms of space and time (see, Figure 42). This principle uses to create a group relationship between objects (Buğa, 2019). If objects are close to each other, even if they are different objects, they tend to be perceived as one whole. “Proximity or grouping; can be provided in many different partnerships, including shape, colour, texture, size or any other visual feature” (Koç & Bulut, 2014).

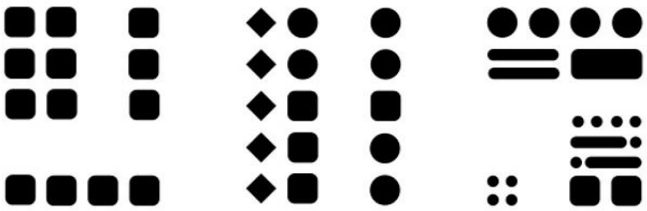


Figure 42: Proximity (URL 25)

- **Common Fate Principle**

The principle of common destiny allows us to perceive how objects around us are related or unrelated (see, Figure 43). Items with the same behavior and in the same destination are perceived such as a group (Koç & Bulut, 2014).

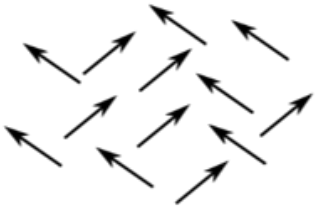


Figure 43: Common Fate (URL 26)

- **Continuity – Good Continuation Principle**

It is the principle that continues to follow one by one and in a certain order, but the appearance of more than one same substance as the same substance (see, Figure 44). These substances are often perceived as a whole, not separate, and so on (Skaalid, 1999).

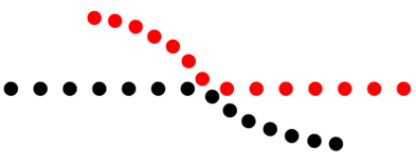


Figure 44: Continuity (URL 27)

- **Closure Principle**

This principle is perceived when an object is missing or the inside of an element is not completely closed, but the viewer can perceive the shape as a whole by filling in the missing information (see, Figure 45).

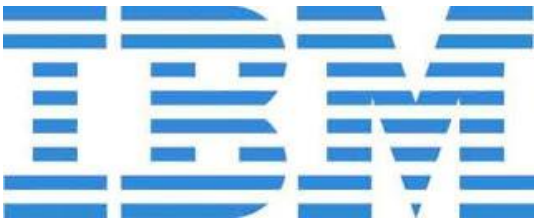


Figure 45: Closure (URL 28)

3.3.2.4 Dimensional Perception

While investigating the effects of colour types on perception, many researchers found that colour types were effective on dimensional perception. Colours can create volumetric differences in the space where they are used. When designing the interior, the surfaces and quantities where the colours are used are very important. Different colour types and tones used in the interior can create different dimensional perceptions (Akdeniz, 1982). Although the actual dimensions of space have not changed, it has been found in many experimental studies that different colour associations and surfaces where colours are used and different dimensional perceptions occur in the interior. It has been proven in many experiments and studies that colour can be perceived differently from the dimensions of space as it is smaller-larger, lower-higher or narrower-wider. It is not possible to do this without knowing the general characteristics of the colours (Özdemir, 2005).

Chromatic diversity allows the eye to focus on different colours. Warm colours such as yellow and red bring objects closer and cool colours such as blue and green move

objects away. The effectiveness of this factor, which affects the different perceptions of the dimensional aspects of space, is increased with tones. Strong and dark colours zoom in on objects, light colours zoom out (Göler, 2009).

Maccubrey and grundlach found that light coloured surfaces were perceived to be larger than dark coloured surfaces (Grudlach, 1926). Goldstein found that the size of an object is perceived in the red environment more and larger than it actually (Goldsteın, 1942). In addition, Yamamura and Oyama, who investigated colour perception, found that colour types were effective on dimensional perception. According to Yamamura and Oyama; blue surfaces are detected further away, red surfaces are detected near (Yamamura & Oyama, 1960).

3.4 Colour-Perception

Colour perception occurs as a result of physical, physiological and psychological phenomena occurring in connection with each other with the existence of light as the most important feature for colour perception. Under general conditions, colour cannot exist without light. Because colour is perceived by light (Aydınantan, 2011).

As already mentioned, indoor colours can create visual, dimensional, auditory and thermal perceptions. The use of multiple colours together, side-by-side or reciprocal selection of colours, or the balance of light colours with dark colours, the dominant colours are not used on large surfaces while providing harmony, perception of space and affect the level of balance and consistency brings affect. When neutral is used instead of colour, the relationship between the fund and the goods in front of the fund becomes important. White, black, gray neutrons, when combined with other colours,

make the properties of the colours more pronounced and reveal the objects and objects in front of them (Gezer, 2012).

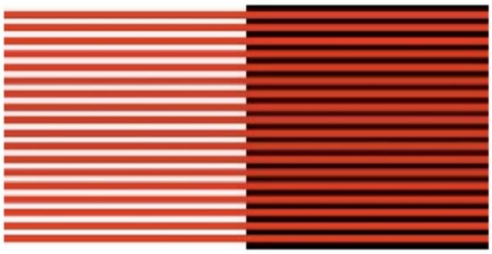


Figure 46: Bezold (URL 29)

Another important element in the perception of colours is the background colours. The bezold effect, named by Wilhelm von Bezold, a German meteorologist, is based on the fact that colours look different from the ambient colour (see, Figure 46). Red colour on white background looks lighter, red colour on black background looks darker (Atlı, 2010).

In the relationship between colour and human psychology, human culture level, economic status, health status, history, memories, instant psychological status, age, gender, space effects are concerned (Göler, 2009). The effect of cold and temperature on human perception of colours has been proven in many studies. "Colours close to yellow are warm and colours close to blue have a cold effect. Warmer colours go to people and cooler ones". According to Arnheim; "Warm colours raise blood pressure, cool colours are lower". Delocroix, on the other hand, said that "warm colours give and represent wealth, joy and yellow, orange and red" (Kandınsky, 1993). Red, orange and yellow are perceived as closer to blue than purple and green, even if they are actually further away (Nemcıss, 1980).

3.5 Colour Use on Interior Space

In the design of houses interiors, knowledge on the effects of colours used within the interior is essential in order to create the feeling of harmony and order in a place. When entering an interior, all psychological or physiological impressions of the perceived space are formed by the colours used in the space (Dinçer, 2011).

When making colour choices in the interior, all the features and perceptual results of the colours should be known. When colours are used consciously, all or some of the desired perceptions can be created in the space.

3.6 Effect of the Colour Use on Interior Space

According to Kamil Güley and Ahenk Bayık "There are five perceptual effects such as colour, sign effect, camouflage effect, time and movement effect, legibility and illegibilty effect and weight, scale and distance effect". In this section, four perception effects of interior colours will be explained. Since 'movement and time' are related to different perceptions of colour in different time periods, that is, daylight and darkness at night, it is not included in this thesis as the interior analysis is performed. Also in this thesis, "legibility and illegibility effect" is used as "legibility effect" and "weight, scale and distance effect" is used as "scale and distance effect".

3.6.1 Sign Effect

"Sign is colour, colour is sign…In fact, signs and colours can be seen as fundamental values – that is, all of those values that can be associated with expressivity'' (Bayık, 2001).

Using colour as a sign is a method of choice in the contemporary world. The effect of colour is not only utilized by interior architects in interior design elements, but is also

preferred by other professions where the workings are connected to the observers through the notions of visual resources such as architects, artists, industrial artists, graphical artists'' (Güley, 2014).

In interior design, colour can be used to emphasize the character of a space or object, to draw attention to its shape and material, or to highlight a desired part of the space (Faulkner, 1972). As mentioned earlier, colour is one of the most important factors in an interior perception. To create coloured focal point in the interior and to emphasize a surface or object, this method can be preferred.

Figure 47: Sign Effect (URL 30)

As shown in figure 47, achromatic colours are used throughout the interior, while the yellow colour used in objects and the seat creates a sign effect. Analyzing figure 47, four elements draw attention which are a seat, cushion, corner beanbag/box and accessory on the console.

3.6.2 Camouflage Effect

"Most animals have a skin system adaptable to their living environment. Camouflage can be defined as the use of colour to make objects as inconspicuous as possible" (Güley, 2014). According to Kamil Güley; the architectural perspective of the colour designed by applying the tones of the setting on the exterior of the architectural structures creates the camouflage effect. The effect of camouflage in the interior is the same as the effect in the outdoor. Using the same colour on all surfaces and fixtures of an interior can create a camouflage effect.

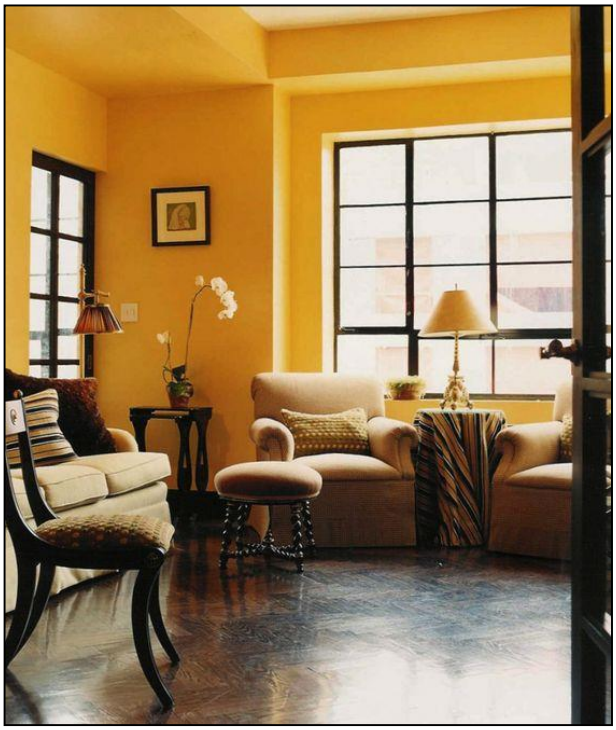


Figure 48: Camouflage Effect (URL 31)

As shown in figure 48, the columns and beams are camouflaged using the same colour on the wall surface of the interior space.

3.6.3 Legibility Effect

Definition of legibility can be recognized as"the ability to be recognized against the background of a figure or figure" (Bayık, 2001). If the same colour and tones are used

in ceiling, wall and flooring which are the main elements of the interior, form and depth becomes lost in space and perception becomes difficult (Özsavaş, 2016).

Figure 49: Legibilty Effect (URL 32)

As shown in figure 49, the surfaces and furniture with the same colour that form the space is difficult to legibilty.

For better legible of indoor surfaces and objects, if warm colours are commonly used throughout the venue, a colour can be selected from the cool colours category. If a single colour is commonly used throughout the space, legibility becomes difficult. By selecting a colour different than the colour used throughout the space, the space can be made legible (Güley, 2014).

3.6.4 Distance and Scale Effect

Colours have a significant effect on the perception of the dimensions of space. “A colour can make objects appear bigger or smaller, higher or lower. In other words, the colour changes the scale of the object perceived by living things” (Lancaster, 1996).

The colour used in the interior affects the proportions of the space. The use of contrast colours in the horizontal direction creates a sense of width and the use of vertical colours creates a sense of height (Aytem, 2005).

Colours produce different visual and volumetric perceptions depending on the surfaces and amount in which they are used. When designing the interior, the surfaces and quantities where the colours are used are very important. In this section, the differences in the perception of the use of colour in the basics of the interior such as ceiling, wall and floor will be explained (Aytem, 2005).

- **Wall**

In the interior, walls form the boundaries of the space, connect and guide. Many studies have shown that when wall surfaces are painted with warm colours, the walls are perceived closer and the area is narrowed. As seen in figure 50, the walls of two spaces of the same size are perceived differently with the use of cold or warm colour. The place where the cold colour is used is perceived wider than the place where the warm colour is used. Therefore, cooler colours should be preferred in small spaces or on surfaces of walls with close distances such as corridors (Özsavaş, 2016).

Figure 50: Use of the cold-warm colour on wall (Özsavaş, 2016)

In his ‘Architecture & Colour Wald, Waldron Faulkner explained the effect of the white wall; white colour is the expression of joy, light, and unity. Excessively used white has dangers such as dazzling and eye strain. Using white as a background for objects and pictures, such as human ports, can make pictures and objects appear darker than they are. Therefore, a wall with a clear, neutral gray colour will provide a better background than white (Foulkner, 1972).

- **Floor**

The colours of the materials used in the floorings should be determined by considering the colours used on the walls in an interior. The colours applied on the floor should be darker than the colours applied on the walls to create the sense of safety and durability for the user (Göler, 2009).

Figure 51: Use of the cold-warm colour on floor (Özsavaş, 2016)

The colours used in the upholstery should provide a sense of safety, security, and durability. According to Özdemir, in order to provide a solid and secure feeling of flooring, colours must be darker than wall colours (Özdemir, 2005).

As seen in figure 51, using light or dark flooring in two spaces of the same size, the light colour provides a wider perception of the space but does not give a feeling of confidence. The use of dark upholstery identifies space smaller but supports a sense of solidity (Özsavaş, 2016).

- **Ceiling**

The ceiling must respond to features such as protection and cover. Ceiling colour is significant for interior perception. The colour of the wall will affect the perception of the proportions and dimensions of visual perception. The ceilings should be painted in a light colour so that people can perceive the area more spacious and spacious. The lighter the ceiling effects in space, the more heavily perceived the walls are. This will increase the feeling of safety on the individual. (Frıelıng, 1978); (Göler, 2009).

Figure 52: Use of the cold-warm colour on ceiling (Özsavaş, 2016)

The function of the ceiling is to cover the space. Ceiling perception becomes difficult in places with high ceilings and may not be detected. If warm or dark colours are used on the ceiling of rooms with low ceiling height, the ceiling is perceived lower than it is. If the ceiling is not too high, the use of light colour makes the ceiling higher than it

is and highlights the colour used on the wall (see, Figure 52). In ceilings where cold colours are used, the ceiling of the space is perceived higher (Özsavaş, 2016).

The effects of the colours used on the structural elements of the interior space to the perception of space can be summarized as follows:

o High ceilings are perceived lower with warm colours and dark values.

o Low ceilings are perceived higher with cold colour and light values.

o The side walls are perceived further away from each other by cold colour and light values, while they are perceived closer to each other by warm colour and dark values.

o Counter walls are perceived sooner with warmer dark values, while cold colours are perceived further away with darker values.

o Floors are perceived as secluded and safe with warm colour dark values, while they give effect of cleanliness and width with cold colour and light values (Özdemir, 2005).

	WARM	**COOL**	**LIGHT**	**DARK**
WALL	Near, Narrow	Far, Wide	Wide, Far	Narrow Near
FLOOR	Narrow	Wide	Wide	Narrow
CEILING	Low	High	High	Low

Figure 53: Effect of colours used in ceilings, walls and floors on space dimensions (Özsavaş, 2016)

3.7 Findings of Chapter 3

In the chapter two of this thesis, types of the housing, evaluation of the mass housing, types of mass housing, housing parts, and interior components are described under the title of house. The housing parts described in chapter two such as living room, dining room, and kitchen are used in the first horizontal section of the observation table prepared for analysis. The interior components described in chapter two such as "structural elements" and "furnitures and fixtures" are used in the vertical section of the observation table prepared for analysis.

In the chapter three of this thesis, basic colour, colour mixtures, evaluation of colour theories, dimension of colour, colour schemes, colour group, factor effecting colour quality, perception in interior spaces, colour perception, colour use on interior spaces and effect of the colour use on interior spaces are described under the title of colour-interior space and perception. The "colour groups" and "colour schemes" described in chapter three such as warm colours, cool colours, achromatic colours, monochromatic colours, analogous colours, and complementary colours are used in the second horizontal section of the observation table prepared for analysis. The effect of the colour use on interior spaces described in chapter three such as "sign effect", "camouflage effect", "legibility effect", and "scale and distance effect" are used in the third horizontal section of the observation table prepared for analysis. The observation table contains, obtained from part 2, living spaces as the living room, the dining room and the kitchen, the colour groups obtained from part 3, the colour schemes and the effects of colour use on the interior spaces (see, Figure 54). Other topics researched within the scope of the thesis are used in the comments in the results and findings section.

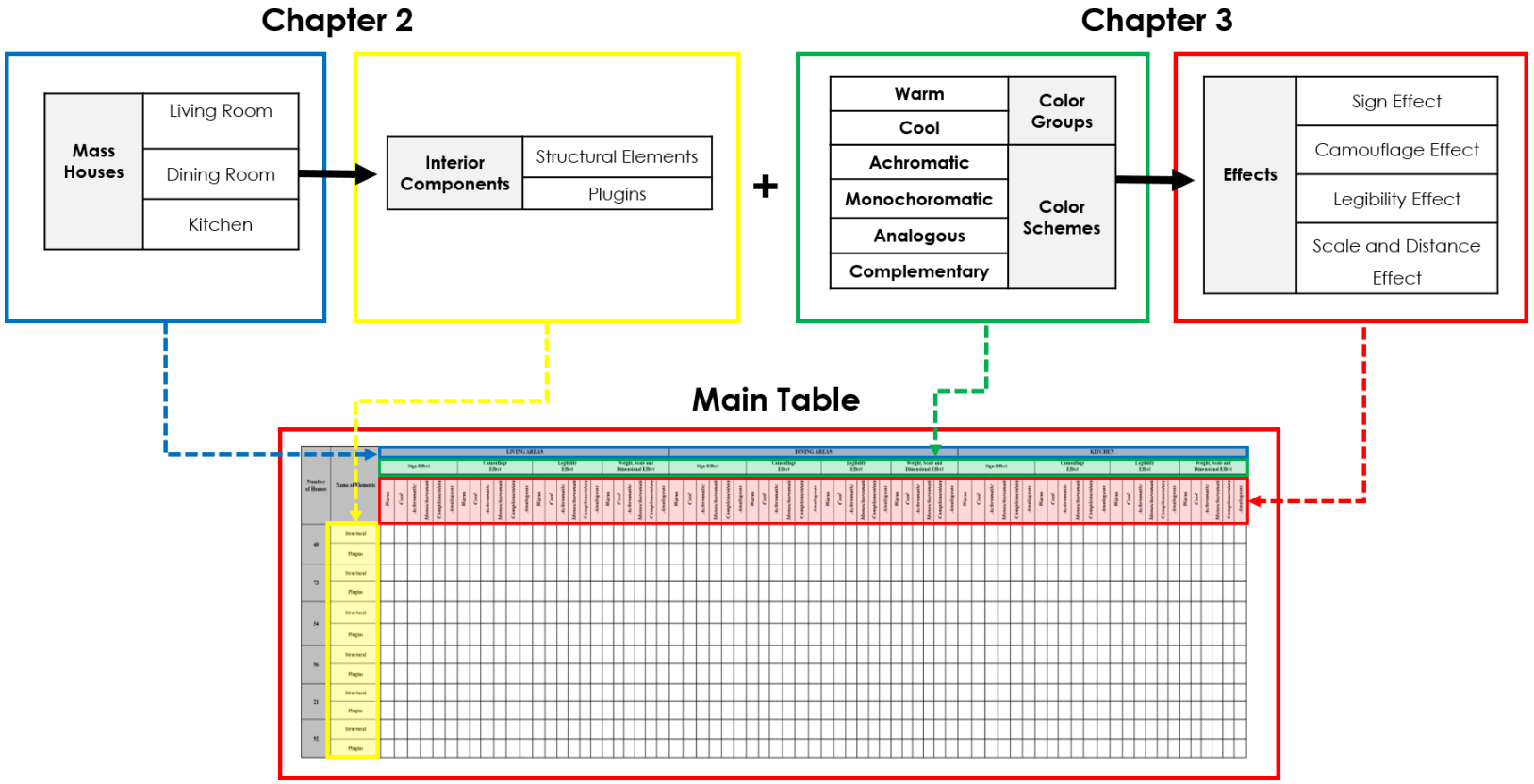


Figure 54: Findings of chapter 2 and 3

Chapter 4

CASE STUDY: USE OF COLOUR ON LIVING SPACES AT SAKLI KENT MASS HOUSING, FAMAGUSTA

The main focus of the study is the unconscious use of the colours used in houses, regardless of the effects on indoor perception. This study aims to explain the importance of choosing the entire structural element and reinforcement colours with an interior architect (conscious interior architect) and the user in all mass houses constructed by construction companies.

Colour is a factor that effects interior perception whereas in the houses deigned by construction companies effect of colour based on interior perception is not considered and the decision of colour use is made at last touch.

In fact, colour is detected first and the most appealing factor in the interior spaces. If the colours used in the houses are chosen by the interior architect and the user during the design process of the building, the desired perceptions can be created in the interior and living spaces that will satisfy the user can be presented.

For these purposes, the Saklı Kent Mass Housing built by the construction company has been selected as the study area.

Figure 55: Location of Famagusta at Cyprus map (Retrieved from Google Earth)

Figure 56: Location of Saklı Kent (Retrieved from Google Earth)

Saklı Kent Mass Housing is divided into two parts as apartments and detached houses (Figure 57). There are 96 detached houses and 96 flats that complex. There are four housing types in Saklı Kent Detached Mass Housing complex (Figure 58).

Figure 57: House Types of Saklı Kent Mass Housing

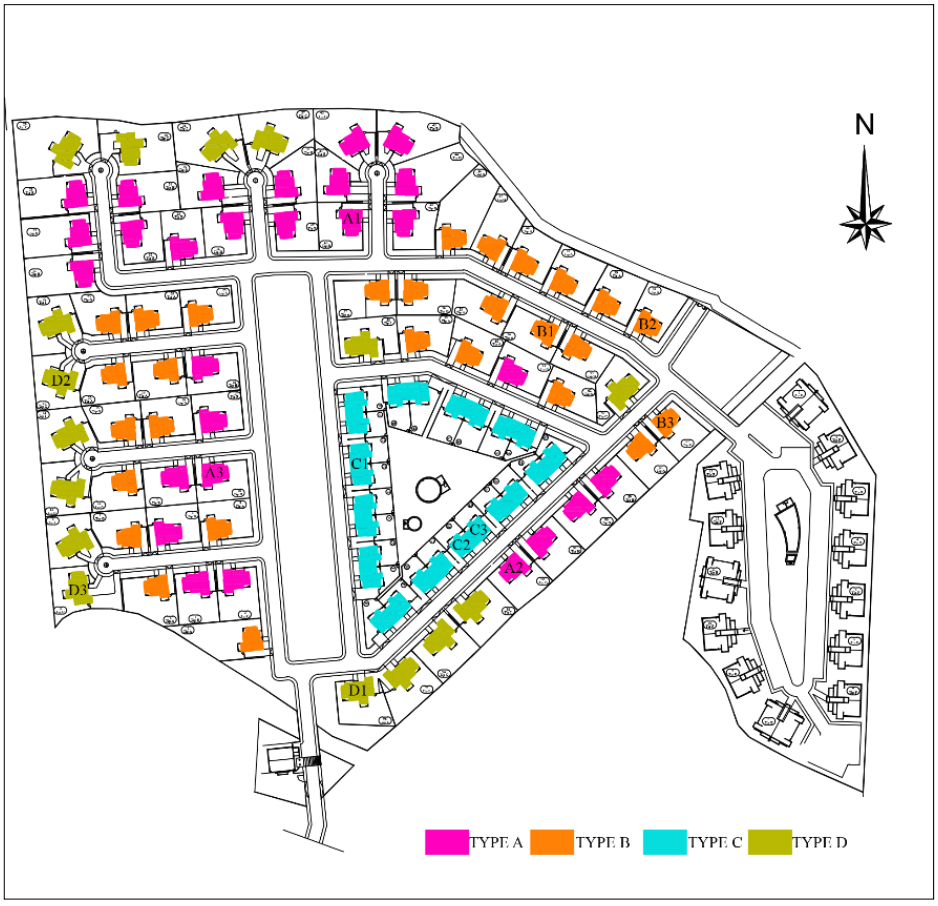


Figure 58: Different Plan Types of Saklı Kent Mass Housing

The Saklı Kent Detached Mass Houses observed was named and numbered alphabetically according to types. By giving the name A to the first type of houses, the type A houses observed were numbered as A1, A2, and A3. Later, other housing types were named as B, C, and D and numbered (see Figure 58). In the text part of the thesis, all observations and analyses made with house number A1 are explained. Analyzes for B, C, D houses and A2, A3 houses can be seen from the tables in the appendix section. The results of all analyzes for 12 houses are given in table 29 in 4.4.

4.1 Limitation of the Case Study

The main selection area is limited to TRNC, Famagusta and newly constructed mass housing. Regarding the area among newly build mass housing Saklı Kent detached mass houses were selected as case area.

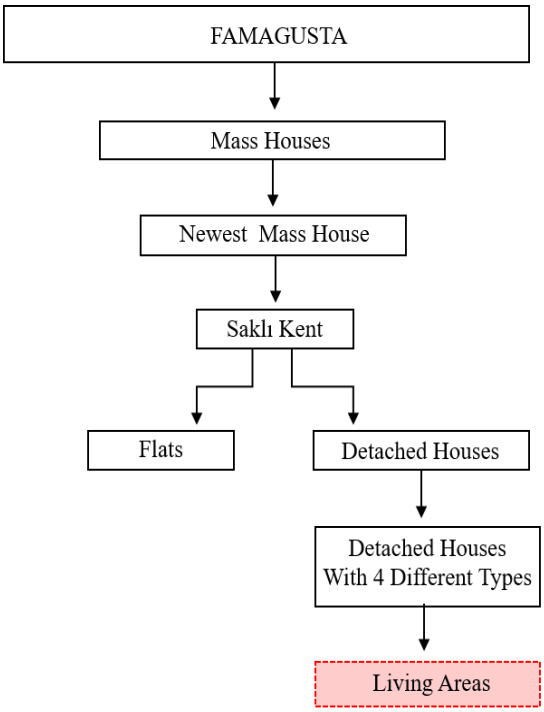


Figure 59: Filtration of selected case study area

The study covers all types of detached housing and analyzes are made only in the living areas of the houses (see, Figure 59). The flats in the Saklı Kent mass houses are outside the scope of the thesis. In addition, this thesis focuses on living spaces such as living room, dining room, and kitchen. Private areas such as bedroom, bathroom, study room and common areas such as wc, laundry room, cellar, garage are not covered by the thesis. 12 houses were analyzed in the study area. 18 houses are vacant and not getting permission has been obtained for analysis from the remaining 66 houses (Figure 60).

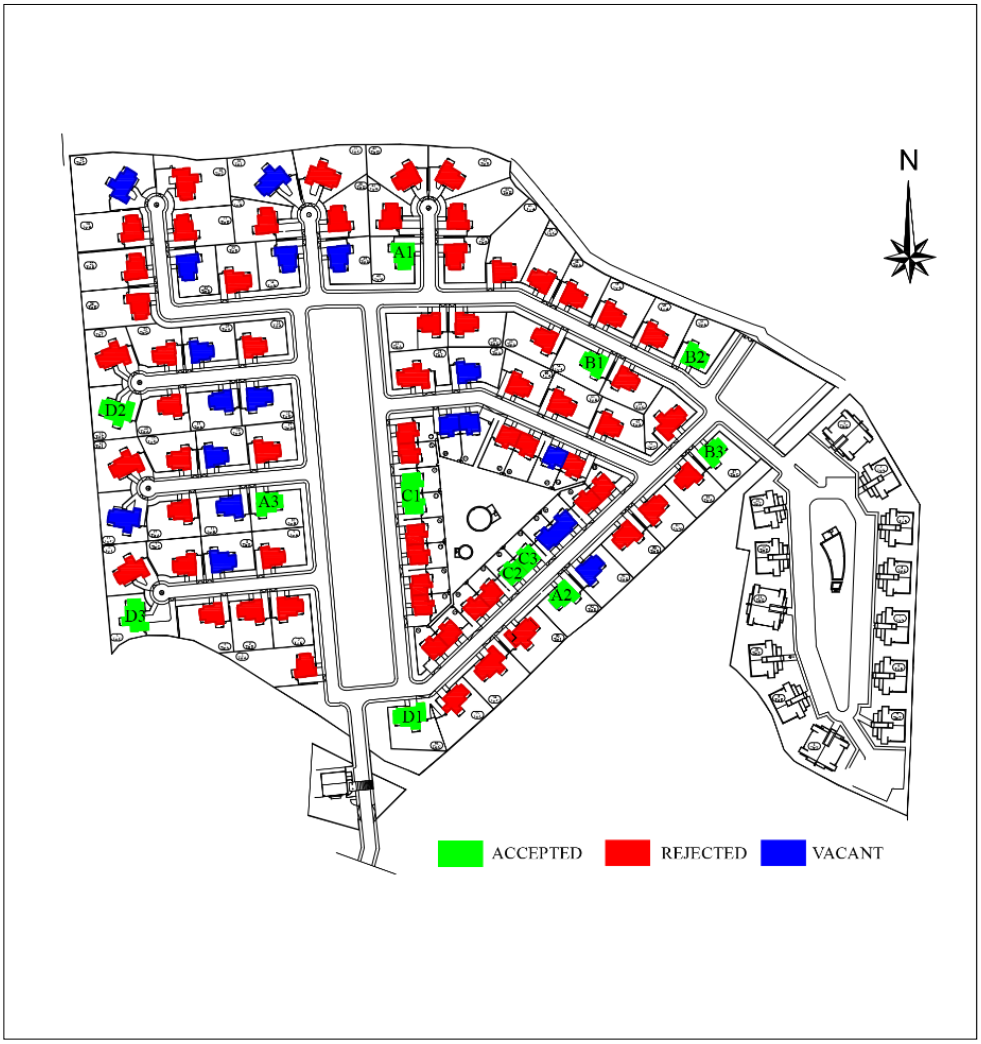


Figure 60: Site Plan According to Analysis Acceptance

Within the scope of this thesis, 3 houses from each type of houses were analyzed.

- Within type 1 three houses were reached and the colours used in living room, dining room and kitchen were analyzed.
- Within type 2 three houses were reached and the colours used in living room, dining room and kitchen were analyzed.
- Within type 3 three houses were reached and the colours used in living room, dining room and kitchen were analyzed.
- Within type 4 three houses were reached and the colours used in living room, dining room and kitchen were analyzed.

This study, a colour analysis was performed in the context of subtractive colour mixtures whereas additive mixture is not covered by the thesis. The analysis was performed with colour groups such as warm and cool colour and colour schemes such as achromatic, monochromatic, analogous and complementary.

4.2 Methodology of the Case Study

Qualitative and quantitative research methods were used in the study. The qualitative method includes observations, the preparation of observation tables obtained from the observations, photographing, and analysis. The quantitative research method includes calculation of the colour amount charts and interpretation of graphs (see, Table 5).

Table 5: Steps of Case Study

Step 1: Preparation
1. Getting plans of houses 2. Determination of house types 3. Access to contact information of residential users and get permission
Step 2: Observation
1. Observation on Living Spaces (living room, dining room and kitchen) 2. Photographing
Step 3: Preparing the tables for analysis
Observation Table of Colour: for analyzing colour groups, colour schemes and colour amounts
• Creating tables in AutoCAD 2018 Software for every houses • Placing photographing on the tables • Determination of colours from PHOTOSHOP CS6 Software • Placing the determined colours with their codes into the table
Observation Table of Color Effects: for analyzing the effects of colours used in structural elements and 'furnitures and fixtures' on the interior
• Creating a table for each living space and each surface in AutoCAD 2018 Software. • Analyzing the sign effect camouflage effect, scale and distance effect and legibility effect for every surface in living space
General Observation Table: for analyzing the interior effects created with colour groups and colour schemes used in structural elements and 'furnitures and fixtures' of living spaces in general.
• Creating a table with all colour groups, colour schemes and effects in AutoCAD Software • Analysis of sign effect camouflage effect, scale and distance effect and readability effect with colour groups and colour schemes for structural elements and 'furnitures and fixtures' in the living area
Step 4: Comments

In the case study, the first part of the qualitative method is to observe the colours used in “structural elements” and “furniture and fixtures” in the selected houses. The observation area includes the living areas (living room, dining room, and kitchen) of the houses.

The second part of the qualitative method is to photograph from the determined points. When taking photos, attention was paid to make all the colours used in the interior spaces visible. In addition, daylight was used when photographing the case area, and all photos were taken between 11.00 am - 14.00 pm, which is the most productive time of the day for photographing.

All analyses in the study area were made on the photographs taken in the houses. The colours of the photographing in the study area were imported to Photoshop Software CS6 and the colours were taken from the photos. The colours defined in Photoshop Software CS6 were accepted as correct and analysis was made on the codes of those colours. In step 1, plans of the houses in the Saklı Kent Mass housing were obtained and it was determined how many types of housing.

After determining the housing types, permission was obtained from the users to make observations and take photos. In step 2, observation and photographing was performed in the housing living spaces that permission was taken by the researcher. In step 3, after photographing and observations, created 3 tables for analysis (see, Table 5).

4.3 Observation Tables

Observation table of colour has been created for the analysis of colour groups, colour schemes, and used colour amounts (see, Table 6). The colours determined on Photoshop CS6 Software, along with their codes, were placed on the observation table of colours prepared in AutoCAD 2018 Software.

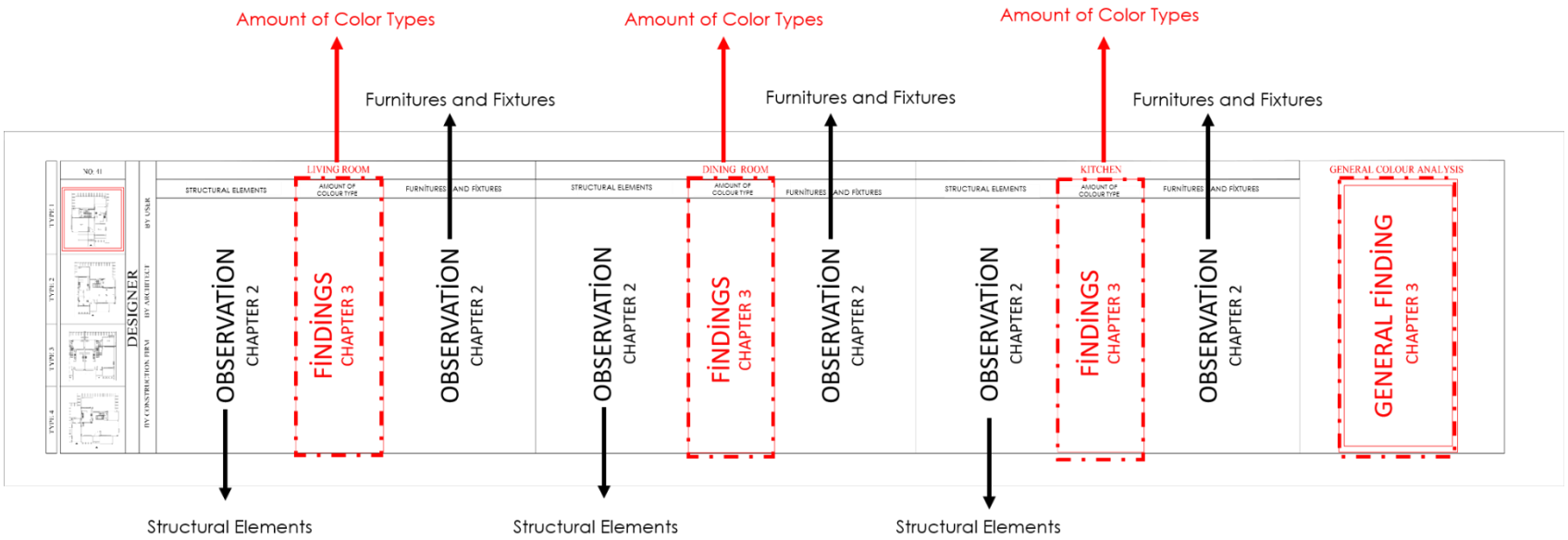


Table 6: Observation Table of Colours

Observation table of colours was examined in 2 groups (see, Table 7). The first group includes interior structural elements such as ceiling, walls, floor, windows, door, stairs, beams, and columns. The second group includes furniture and fixtures such as furniture (sofa, tv unit, chairs, etc.), kitchen worktop, kitchen ceramic, curtains, pillows, carpets, accessories, and lightings (see, Table 7).

Table 7: Subheadings of the Colour Observation Table

Interior Structural Elements	**Furniture and Fixtures**
• Ceiling • Walls • Floors • Windows • Doors • Stair • Beams • Column	○ Furnitures • Sofa • Coffe Tables • Tv Units • Dining Tables • Chairs • Cabinet • Kitchen Cabinets ○ Fixtures • Kitchen Worktop • Kitchen Ceramic • Curtains • Pillows • Carpets • Accessoires • Lightings

Since the interior structural elements and the interior fixtures in housing interiors are more than one, they are encoded within itself. As shown in Table 8, the walls are coded as W1, W2, W3, W4, and TV units are coded as TU1, TU2. Stair, cabinet, kitchen worktop, kitchen ceramic, ceiling elements that have one or the same colour for the elements are not coded (see, Table 8).

Table 8: Code of the Analysis Elements

	Number of Elements				
Name of Elements	Elements 1	Elements 2	Elements 3	Elements 4	Elements 5
Sofa	SO1	SO2	SO3	-	-
Coffe Table	CT1	CT2	-	-	-
Tv Unit	TU1	TU2	-	-	-
Dining Table	DT1	DT2	-	-	-
Chair	CH1	CH2	CH3	-	-
Cabinet	-	-	-	-	-
Lighting	L1	L2	-	-	-
Kitchen Cabinet	KC1	KC2	KC3	-	-
Kitchen Worktop	-	-	-	-	-
Kitchen Ceremic	-	-	-	-	-
Curtain	CU1	CU2	CU3	-	-
Pillow	P1	P2	P3	P4	-
Carpet	CA1	CA2	CA3	-	-
Accessoires	A1	A2	A3	A4	A5
Ceiling	-	-	-	-	-
Wall	W1	W2	W3	W4	-
Floor	F1	F2	F3	-	-
Beam	B1	B2	B3	-	-
Column	CO1	CO2	CO3	-	-
Stair	-	-	-	-	-
Windows	-	-	-	-	-
Door	-	-	-	-	-

In accordance with the colours added to the observation table of the colour, the usage of colour groups and colour schemes in the houses were analyzed. The purpose of this analysis is to examine the effects of interior colours on the perception of space. In the observation table of colour, the colours used in the space and their usage rates in the space were defined by charts (Figure 61).

While analyzes the amount of colour types in the living spaces of the houses, each space is divided into two as structural elements and "furniture and fixtures". Colour amounts were determined according to the number of elements analyzed in the space. For example, if there are 11 surfaces analyzed in space and 1 among 11 surfaces is defined as a warm colour, and 10 surfaces are defined as achromatic colour; warm colour will be presented as 1 and achromatic colour will be presented as 10 (Figure 61).

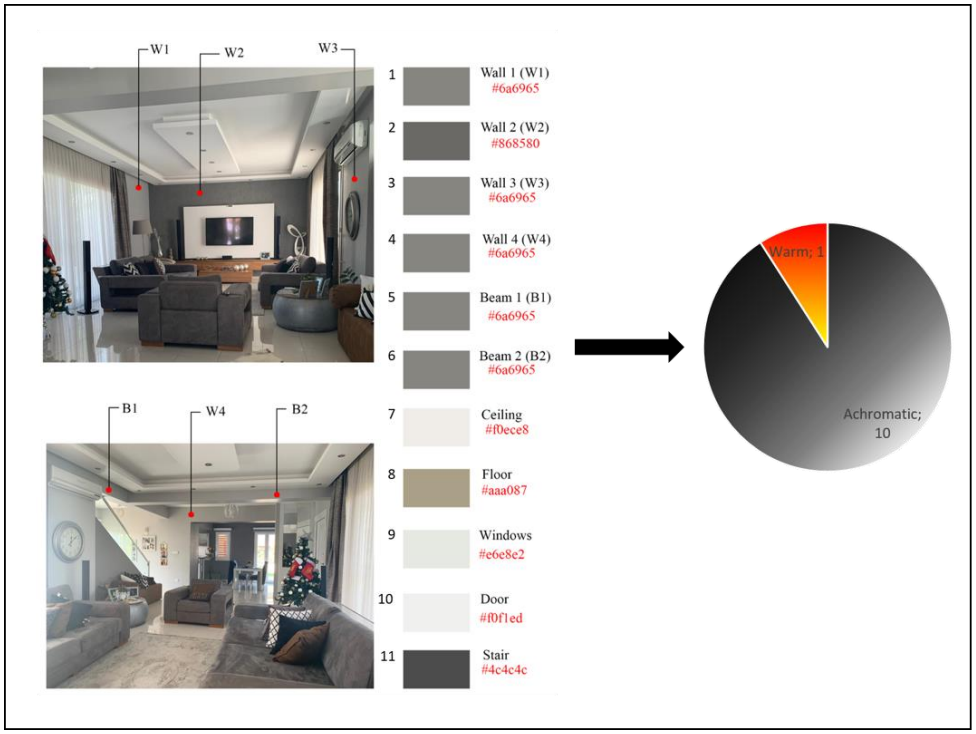


Figure 61: Example of the Amount of Colour Types in the Interior

After determining the amount of the colour used in the general “structural elements” and “furniture and fixtures” of each house, 9 tables were created for each house in the AUTOCAD 2018 Software to analyze the effects of colour such as sign effect, camouflage, legibility, scale, and distance (see, Figure 62).

These tables are divided into 3 parts as a living room, kitchen and dining room. The tables of each living space are divided into 3 parts according to their usage areas as structural elements, furniture, and fixtures.

These tables include the effects of the colour obtained from the literature review of chapter 3 on the perception of the interior. It is not possible to fill this table without knowing the effects of colour on indoor perception.

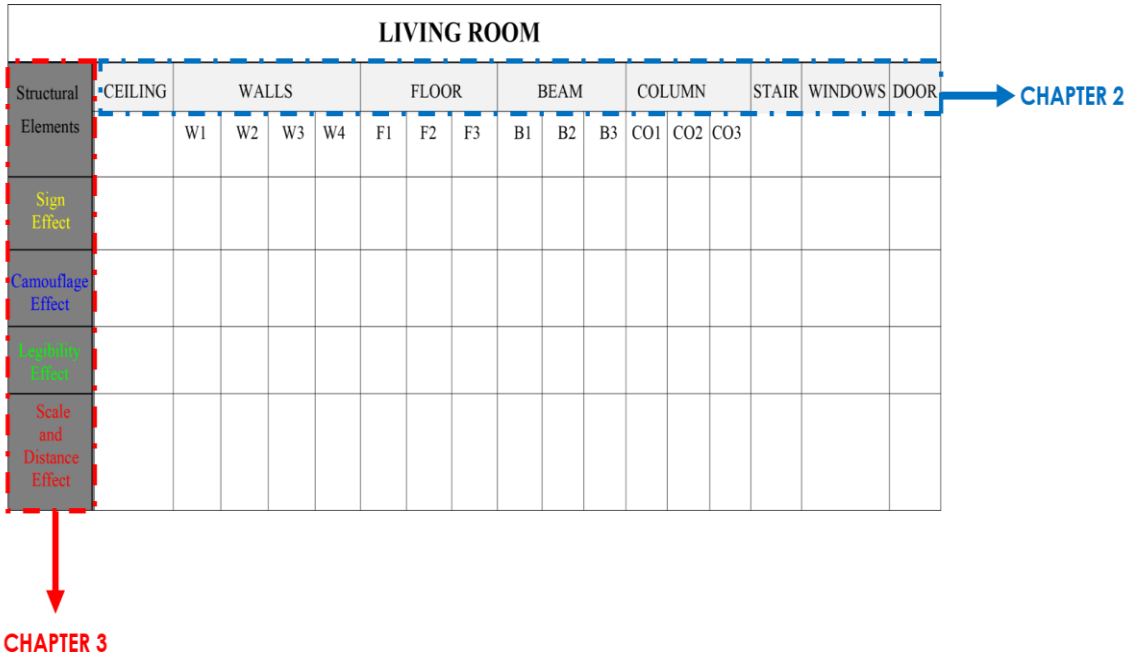


Figure 62: Observation Table of Colour Effects

For living room;

Table 9: The effects of colours used in living room structural elements on the perception of space

LIVING ROOM																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect																	
Scale and Distance Effect																	

Table 10: The effects of colours used in living room furniture on the perception of space

LIVING ROOM																	
FURNITURES	FURNITURES																
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect																		
Scale and Distance Effect																		

Table 11: The effects of colours used in living room fixturess on the perception of space

LIVING ROOM																		
FIXTURES	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect																		
Scale and Distance Effect																		

For the dining room;

Table 12:The effects of colours used in the structural elements of the dining room on the perception of space

DINING ROOM																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect																	
Scale and Distance Effect																	

Table 13: The effects of colours used in dining room furniture on the perception of space

DINING ROOM																	
FURNITURES	FURNITURES																
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect																		
Scale and Distance Effect																		

Table 14: The effects of the colours used in the Dining room Fixturess elements on the perception of space

DINING ROOM																		
FIXTURES	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect																		
Scale and Distance Effect																		

For kitchen;

Table 15:The effects of colours used in kitchen structural elements on the perception of space

KITCHEN																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect																	
Scale and Distance Effect																	

Table 16: The effects of colours used in kitchen room furniture on the perception of space

KITCHEN																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect																		
Scale and Distance Effect																		

Table 17: The effects of colours used in Kitchen Fixturess elements on the perception of space

KITCHEN																		
FIXTURES	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect																		
Scale and Distance Effect																		

After filling in 9 tables where effects such as signal effect, camouflage, legibility, scale, and distance were analyzed, a general observation table was created to analyze which colour groups and colour schemes were used most often interior to create these effects. This table includes colour groups, colour schemes, sign effect, legibility effect, camouflage effect, scale and distance effect obtained by colour research (see, Table 18).

Table 18: Genaral Observation Table

Types of Houses	Number of Houses	Name of Elements	LIVING ROOM																								DINING ROOM																								KITCHEN																							
			Sign Effect						Camouflage Effect						Legibility Effect						Weight, Scale and Dimensional Effect						Sign Effect						Camouflage Effect						Legibility Effect						Weight, Scale and Dimensional Effect						Sign Effect						Camouflage Effect						Legibility Effect						Weight, Scale and Dimensional Effect					
			Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous	Warm	Cool	Achromatic	Monochoromatic	Complementary	Analogous
Type A	A1	Structural																																																																							
		Furnitures and Fixtures																																																																							
	A2	Structural																																																																							
		Furnitures and Fixtures																																																																						
	A3	Structural																																																																							
		Furnitures and Fixtures																																																																							
Type B	B1	Structural																																																																							
		Furnitures and Fixtures																																																																							
	B2	Structural																																																																							
		Furnitures and Fixtures																																																																							
	B3	Structural																																																																							
		Furnitures and Fixtures																																																																							
Type C	C1	Structural																																																																							
		Furnitures and Fixtures																																																																							
	C2	Structural																																																																							
		Furnitures and Fixtures																																																																							
	C3	Structural																																																																							
		Furnitures and Fixtures																																																																							
Type D	D1	Structural																																																																							
		Furnitures and Fixtures																																																																							
	D2	Structural																																																																							
		Furnitures and Fixtures																																																																							
	D3	Structural																																																																								
		Furnitures and Fixtures																																																																							

4.3.1 Filling Out the Analysis Table on House A1

Three of these housing types in the study area were analyzed. According to the observations, it is estimated that 1 house was designed by the interior designer and the other 2 houses was designed by the user.

Figure 63: Saklı Kent Detached Mass House, Type A1

While examining the colours of the houses and the effects of the colours, the colours used were divided into 3 as the colours of the structural elements, furniture and fixtures.

- **Living Room**

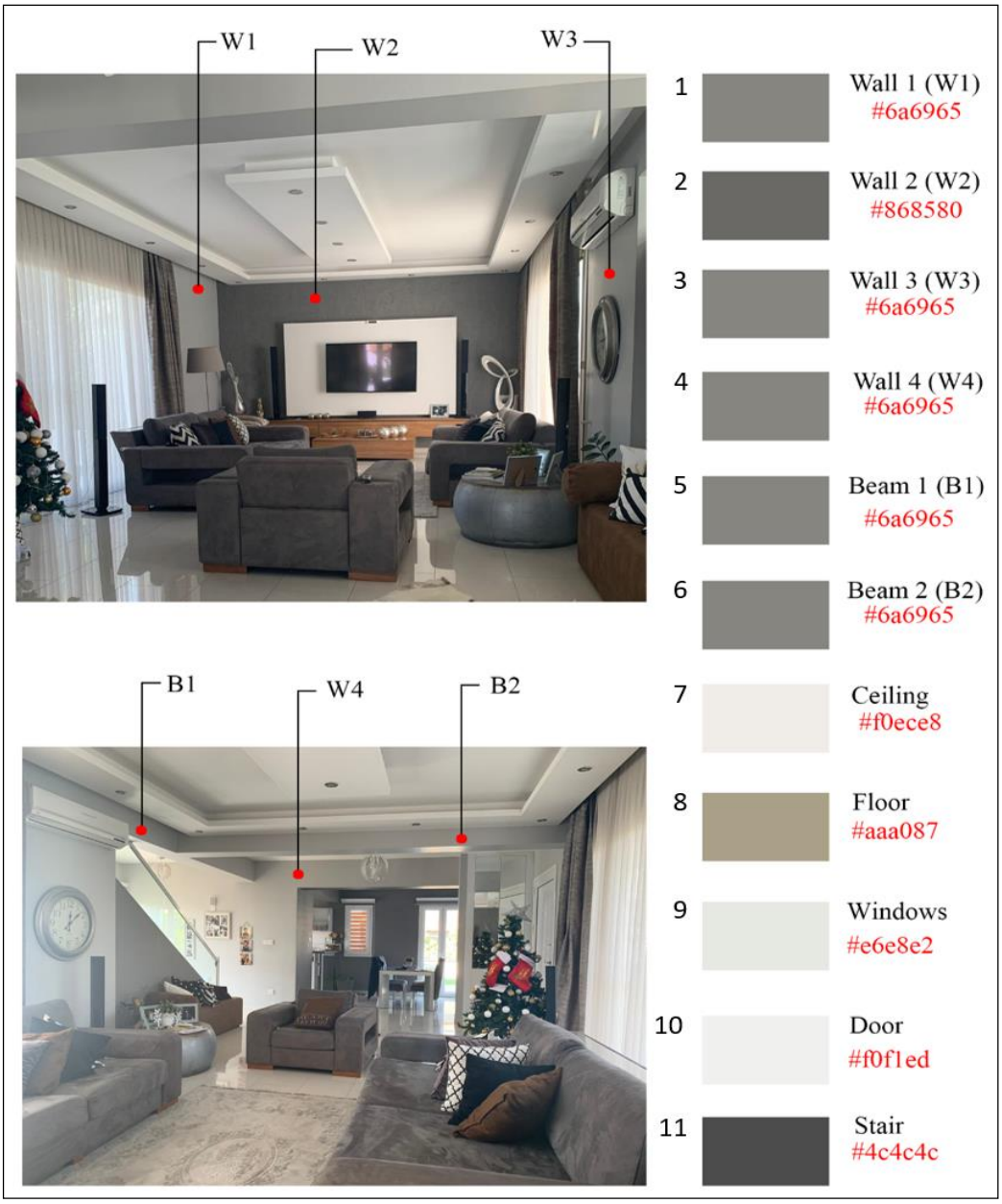


Figure 64: Colours Used in the Structural Elements of the Living Room (Type A1)

In house A1, 11 surface colours of the structural elements in the living room were analyzed. According to the colour amount analysis (see, Figure 65), achromatic colours were generally used in the structural elements of the house.

Only the light tone of warm colours was used in the flooring. All surfaces in the structural elements affect the amount of colour in the interior by 1/10.

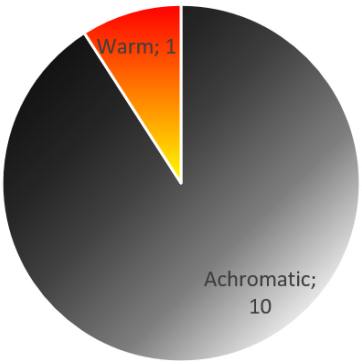


Figure 65: Analysis of the Amount of Colour Types on Living Room Structural Elements (Type A1)

Regarding the structural elements of the living room of the house A1, the wall coded as W2 has a sign effect because it is darker than the other surface colours in the space. In addition, the dark gray ladder creates a sign effect within the space since the surfaces around it have lighter colours. The beams B1 and B2 are painted the same colour as the walls W3 and W4, which are connected, creating a camouflage effect. The white ceiling provides legibility because the wall colours are darker.

Wall surfaces coded as W2, W2, W3 and W4 are darker than floor and ceiling, created legibility. The beams B1 and B2 have the same colour as the walls W3 and W4 that are connected, causing their legibility difficult. The light cream coloured floor is lighter than wall colours, providing legibility effect. The dark gray staircase is legible in the space as the surrounding surfaces are lighter colours. White doors and windows are easily legible because they are positioned on a dark wall.

The white colour of the ceiling makes it possible to perceive the interior ceiling height higher than it actually is. In the rectangular space, the dark wall with the code W2 makes the space perceived as square because it is perceived closer. Since W1, W3 and W4 coded walls are light coloured, they are perceived further away from each other.

This effect provides a wider perception of space. The light cream coloured floor is lighter than the wall colours despite the warm colour, thus providing a wider perception of the interior.

Table 19: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (Type A1)

LIVING ROOM																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible	Illegible					Legible	Legible	Legible
Scale and Distance Effect	High	Near	Far	Far	Far	Wide											

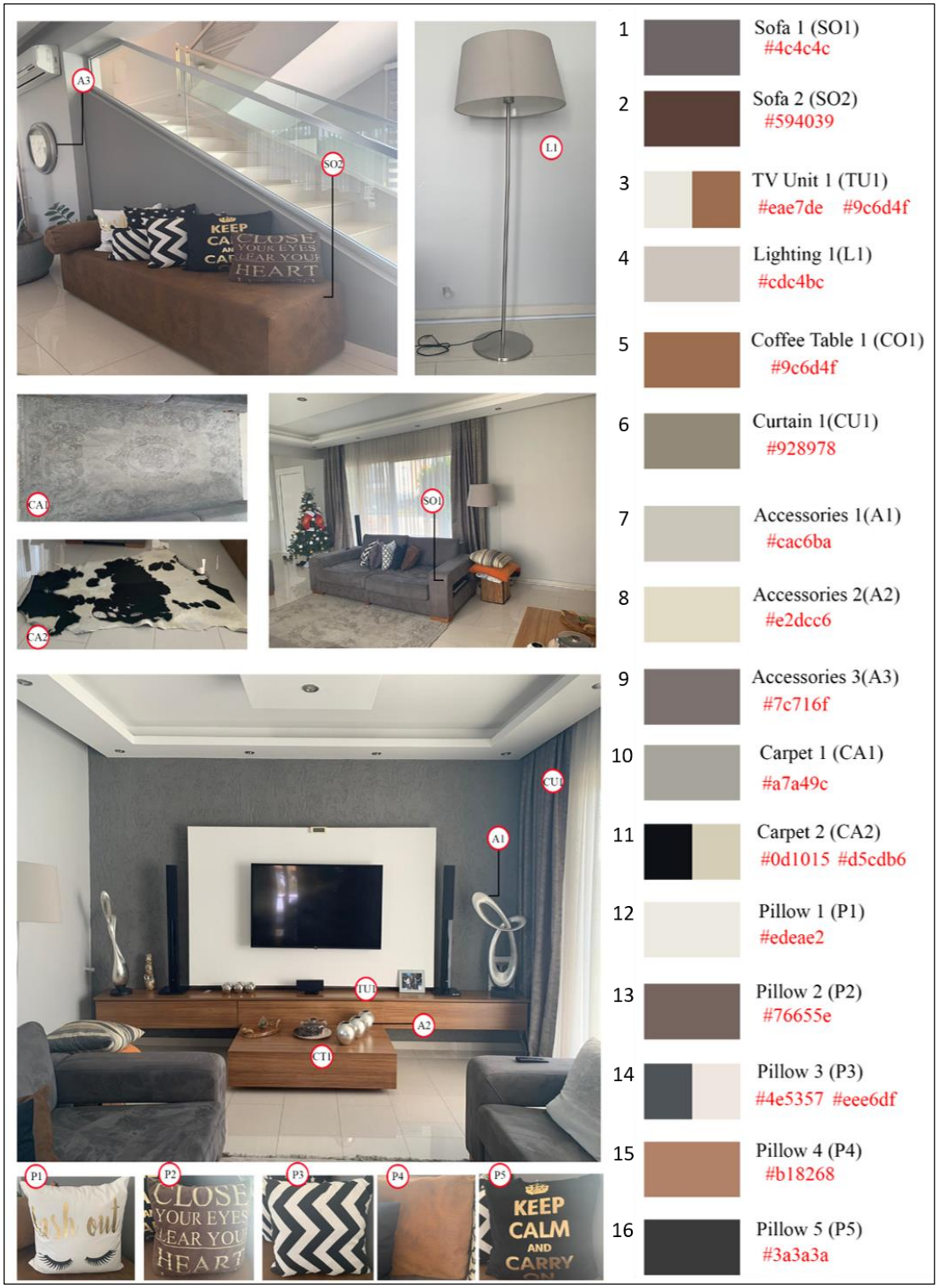


Figure 66: Colours Used in the Furnitures and Fixtures of the Living Room (Type A1)

In the living room furnitures and fixtures of the house, 16 element colours were analyzed. According to the colour amount analysis (Figure 67), achromatic colours were generally used in the furnitures and fixtures of the house. Only 5 elements used warm colour tones. There is having a sofa, TV unit, coffee table, 2 pillows in front of the stairs. All furnitures colours affect the indoor colour by 1/16.

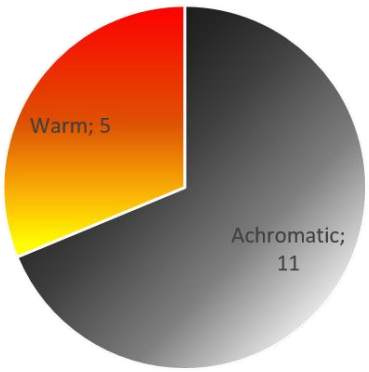


Figure 67: Analysis of the Amount of Colour Types on Living Room Furnitures and Fixtures (Type A1)

In living room, furnitures and structural elements included achromatic colours, while the warm coloured (Brown) coffee table with the code number CT1 and the TV units with the code number TU1 creates a sign effect. Dark colour sofa with code number SO1 has legible since it stands in front of a light coloured wall. Dark colour coffee table with code number CT1 was legible because it is on a light coloured background. If the coffee table with code number CT1 was in front of a dark coloured background, the legibility would be difficult. The white surface of the TU1 coded TV unit is legible as it stands in front of a dark gray wall.

Table 20: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (Type A1)

LIVING ROOM																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible			Legible		Legible												
Scale and Distance Effect																		

In the living room fixtures, the warm-coloured curtain with code number CU1 is legible because it is darker than the wall on which it is located. The warm-coloured pillow with code number P2 is illegible because it has a close colour with the sofa it is on. Accessories A1 and A2 are legible as they have a darker background than their colour. The clock A3 has approximately the same colour as the wall on which it is located so it is illegible. The carpet with code number CA1 creates an illegible effect because the colour of the carpet is lighter than the colour of the floor. The carpet with code number CA2 is legible because the colour of the carpet is darker than the colour of the floor.

Table 21: The Effects of Colours Used in Living Room Fixtures on the Perception of Space (Type A1)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible				Illegible						Legible	Legible	Illegible			Illegible	Legible	
Scale and Distance Effect																		

Dining Room

Figure 68: Colours Used in the Structural Elements of the Dining Room (Type A1)

9 surface colours were analyzed in the structural elements of the dining room. According to the colour amount analysis (Figure 69), achromatic colours were generally used in the structural elements of the house. Only the light tone of warm colours was used in the floorings. All surfaces in the structural elements affect the amount of colour in the interior by 1/9.

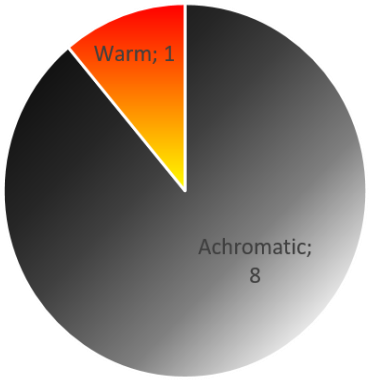


Figure 69:Analysis of the Amount of Colour Types on Dining Room Structural Elements (Type A1)

The beams coded as B1 and B2 have been painted with the same colour as W1, W2, W3 and W4 coded walls in the same space, creating a camouflage effect. The white ceiling is lighter coloured than the walls to which it is attached, so it is legible and makes space perceived higher than it actually is. W1, W2, W3 and W4 coded dark gray because they are perceived closer to each other. This makes the space narrower. The ground colour in light cream tones is legible since it is lighter than wall colours and makes the space perceived wider than it is.

Table 22: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (Type A1)

DINING ROOM																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible					Legible											
Scale and Distance Effect	High	Near Narrow	Near Narrow	Near Narrow	Near Narrow	Wide											

Figure 70: Colours Used in the Furnitures and Fixtures of the Dining Room (Type A1)

In the dining room furnitures and fixtures, 6 element colours were analyzed. According to the colour amount analysis (Figure 71), achromatic colours were generally used in the fixtures elements of the house. Only 1 element has a warm colour. The element with warm colour is the accessory on the dining table. All elements's colours affect the indoor colour by 1/6.

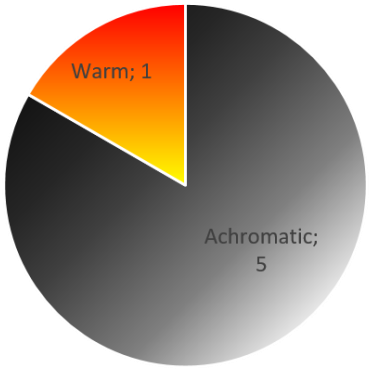


Figure 71: Analysis of the Amount of Colour Types on Dining Room Furnitures and Fixtures (Type A1)

In the dining room furnitures, the white surface of the TU1 coded TV unit is legible as it stands in front of a dark gray wall. Dining table DT1 and chairs CH1 are difficult to read since they have the same darkness as the wall colours of the room. In the living room fixtures, the curtain with code number CU2 is easier to read because it is lighter coloured than the wall on which it is located. CA3 coded carpet is darker coloured than the floor on which it is legible.

Table 23:The Effects of Colours Used in Dining Room Furnitures on the Perception of Space (Type A1)

DINING ROOM																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN	KITCHEN
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3	WORKTOP	CERAMIC
Sign Effect																		
Camouflage Effect																		
Legibility Effect							Legible	Illegible		Illegible								
Scale and Distance Effect																		

Table 24: The Effects of Colours Used in Dining Room Fixturess on the Perception of Space (Type A1)

DINING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect		Legible																Legible
Scale and Distance Effect																		

Kitchen

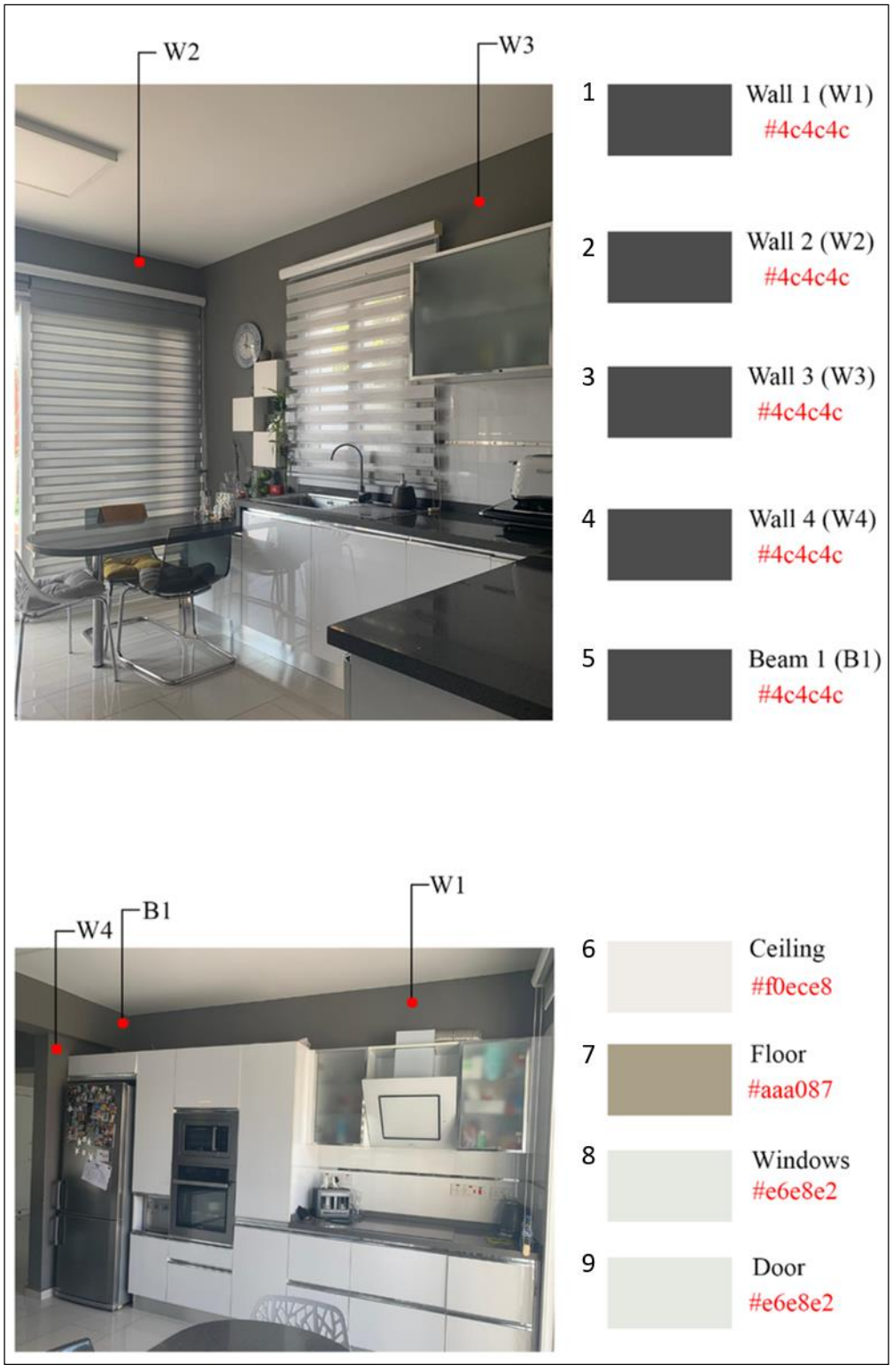


Figure 72: Colours Used in the Structural Elements of the Kitchen. (Type A1)

In the kitchen structural elements of the house, 9 surface colours were analyzed. According to the colour amount analysis (Figure 73), achromatic colours were generally used in the structural elements of the house. Only the light tone of warm colours was used in the flooring. All surfaces in the structural elements affect the amount of colour in the interior by 1/9.

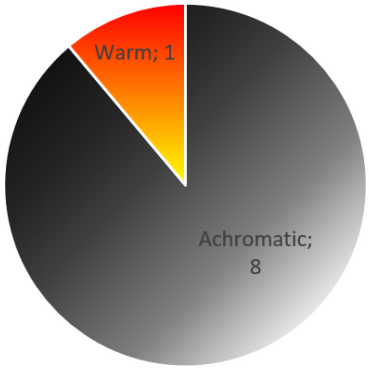


Figure 73: Analysis of the Amount of Colour Types on Kitchen Structural Elements (Type A1)

In the kitchen structural elements, the B1 coded beam is painted to the same colour as W1, W2, W3, and W4 coded walls in the same space, creating a camouflage effect. The white ceiling coloured lighter than the walls it was attached to, so it is readable and makes the space perceived higher than it actually is. Dark gray coloured walls with the codes W1, W2, W3, and W4 are perceived closer to each other that causes narrow perception of the space. The light cream coloured floor is perceived broader because it is lighter than the wall colours. White doors and windows are legible because they are on a dark wall.

Table 25: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (Type A1)

KITCHEN																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible										Legible	Legible
Scale and Distance Effect	High	Near Narrow	Near Narrow	Near Narrow	Near Narrow	Wide											

Figure 74: Colours Used in the Furnitures and Fixtures of the Kitchen (Type A1)

In the kitchen furnitures and fixtures of the house, 8 element colours were analyzed. According to the colour quantity analysis (Figure 75), achromatic colours were generally used in the furniture and fixture elements of the house. Only one element used a cold colour. The element used in cold colour is the clock on the wall. All elements's colours affect the amount of indoor colour by 1/8.

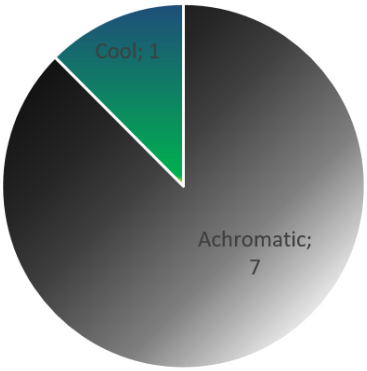


Figure 75: Analysis of the Amount of Colour Types on Kitchen Furniture and Fixture Elements (Type A1)

In the kitchen furnitures, the kitchen cabinet coded KC 1 is legible because it is on the dark gray wall. The kitchen worktop, which is approximately black, is legible because it is on white kitchen cabinets. The kitchen ceramic, which is approximately white, is illegible because it is between white kitchen cabinets. The CU2 coded curtain is legible since it is located on the dark-coloured W2 coded wall. The A5 coded accessorize is lighter coloured than the wall colour, making it legible.

Table 26: The Effects of Colours Used in Kitchen Furnitures on the Perception of Space (Type A1)

KITCHEN																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect														Legible			Legible	Illegible
Scale and Distance Effect																		

Table 27: The Effects of Colours Used in Kitchen Fixtures on the Perception of Space (Type A1)

KITCHEN																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect		Legible													Legible			
Scale and Distance Effect																		

Table 30. Findings of Color Uses and Color Effects on House A1

TYPE A

TYPE B

TYPE C

TYPE D

TYPE A1

DESIGNER

BY USER

BY ARCHITECT

BY CONSTRUCTION FIRM

LIVING ROOM

STRUCTURAL ELEMENTS

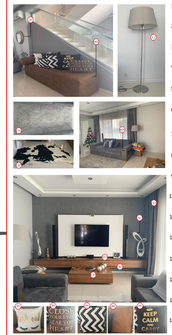
1		Wall 1 (W1) #6a6965
2		Wall 2 (W2) #8d8580
3		Wall 3 (W3) #6a6965
4		Wall 4 (W4) #6a6965
5		Beam 1 (B1) #6a6965
6		Beam 2 (B2) #6a6965
7		Ceiling #f0ece8
8		Floor #aaa087
9		Windows #e6e8e2
10		Door #f0f1ed
11		Stair #4c4c4c

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

FURNITURES AND FIXTURES



1		Sofa 1 (SO1) #4c4c4c
2		Sofa 2 (SO2) #594859
3		TV Unit 1 (TU1) #eae7de #9c6d4f
4		Lighting 1(L1) #a4c4be
5		Coffee Table 1 (CO1) #9c6d4f
6		Curtain 1(CU1) #928878
7		Accessories 1(A1) #cac0ba
8		Accessories 2(A2) #e2dac6
9		Accessories 3(A3) #7c716f
10		Carpet 1 (CA1) #a3a69c
11		Carpet 2 (CA2) #0d1015 #d7cdb6
12		Pillow 1 (P1) #e0ece2
13		Pillow 2 (P2) #76655e
14		Pillow 3 (P3) #4e5357 #aa6d4f
15		Pillow 4 (P4) #b18268
16		Pillow 5 (P5) #3a3a3a

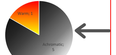
DINING ROOM

STRUCTURAL ELEMENTS

1		Wall 1 (W1) #4c4c4c
2		Wall 2 (W2) #4c4c4c
3		Wall 3 (W3) #4c4c4c
4		Wall 4 (W4) #4c4c4c
5		Ceiling #f0ece8
6		Beam 1 (B1) #4c4c4c
7		Beam 2 (B2) #4c4c4c
8		Windows #e6e8e2
9		Floor #aaa087

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Dining Room Structural Elements



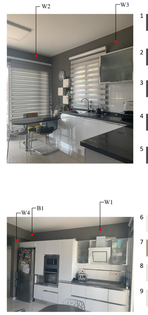
Analysis of the Amount of Color Types on Dining Room Plugin Elements

FURNITURES AND FIXTURES

1		TV Unit 2 (TU2) #eae7de
2		Dining Table 1 (DT1) #9c6a76
3		Chair 1 (CH1) #514c49
4		Carpet 3(CA3) #09978c
5		Curtain 2 (CU2) #a8a79c
6		Accessories 4 (A4) #7a6e5e #aac5dc

KITCHEN

STRUCTURAL ELEMENTS



1		Wall 1 (W1) #4c4c4c
2		Wall 2 (W2) #4c4c4c
3		Wall 3 (W3) #4c4c4c
4		Wall 4 (W4) #4c4c4c
5		Beam 1 (B1) #4c4c4c
6		Ceiling #f0ece8
7		Floor #aaa087
8		Windows #e6e8e2
9		Door #e6e8e2

AMOUNT OF COLOUR TYPES

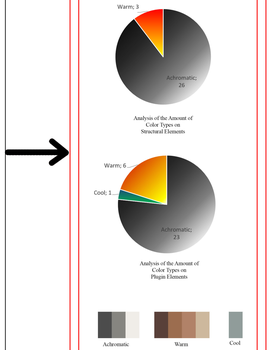
Analysis of the Amount of Color Types on Kitchen Structural Elements

Analysis of the Amount of Color Types on Kitchen Plugin Elements

FURNITURES AND FIXTURES

1		Kitchen Cabinet (KC1) #e7e4da
2		Kitchen Ceramic #f3f0e7
3		Kitchen Worktop #353733
4		Dining Table 2 (DT2) #353733
5		Chair 2 (CH2) #bcbeb8
6		Chair 3 (CH3) #767e81
7		Curtain 2 (CU2) #a8a79c
8		Accessories 5 (A5) #8f8c99

GENERAL COLOUR ANALYSIS



Analysis of the Amount of Color Types on Structural Elements

Analysis of the Amount of Color Types on Plugin Elements

4.4 General Findings of Saklı Kent

The colour used in the interior design creates visual and dimensional perception differences in interior perception. When designing the interior, the use of colour groups and schemes and the effect of colours on the interior is very important. Although the actual dimensions of space do not change, different dimensional perceptions can be created with colour used in the space. Colours provide the interior to be perceived differently, such as smaller, bigger, wider, narrower, higher, and lower.

This study includes observations and analyses on 12 houses with 3 samples of each type from 4 different types of detached houses located in Saklı Kent Mass Housing complex. In order to reach the findings of the colours and their effects used in the houses, analyzes were made on the colour observation table and colour effect tables for each housing.

In Chapter 4.3, only the analyses made on A1 coded house are explained. Analyzes over the other 11 houses analyzed can be seen in the tables in the sections called appendix 1-11 in the appendix. The findings obtained from these tables prepared as a result of the observations are combined with the method of overlap, and all the findings are summarized in table 29. Table 29 shows the effects of the colours and colours used in the structural elements and furniture and fixtures of the living spaces.

According to table 29, achromatic colours were preferred widely in structural elements and warm, cool, analogous and complementary colour types were preferred. It is thought that achromatic colours are widely used because of their easy colour harmony and fashion. Achromatic colours are easy to match with all colour variations. Achromatic colours are most preferred for colour matching in the interior. While warm

colours were encountered in structural elements, cool colours weren't encountered. Cool colours were used only in furniture and accessories. According to the table 29, complementary and analogous colours are preferred only for the colour of the fixtures elements such as furniture, accessories. Complementary and analogous colours weren't encountered on structural elements of any houses. Monochromatic colours weren't encountered in any houses.

It is thought that achromatic colours are widely used because of their easy colour harmony and fashion. Achromatic colours are easy to match with all colour variations. Achromatic colours are most preferred for colour matching in the interior. While warm colours were encountered in structural elements, cool colours weren't encountered. Cool colours were used only in furniture and accessories. According to the table, complementary and analogous colours are preferred only for the colour of the fixtures elements such as furniture, accessories. Complementary and analogous colours weren't encountered on structural elements of any houses. Monochromatic colours weren't encountered in any houses.

In order to make the numerical results obtained from table 29 easier to read, mathematical ratio calculations were made and percentage values were reached. Percentage results of the colours used and colour effects are given in table 30.

Table 29: Findings of Colour and Effects

LIVING ROOM

Types of Houses	Number of Houses	Name of Elements	Sign Effect: Warm	Sign Effect: Cool	Sign Effect: Achromatic	Sign Effect: Monochoromatic	Sign Effect: Complementary	Sign Effect: Analogous	Camouflage Effect: Warm	Camouflage Effect: Cool	Camouflage Effect: Achromatic	Camouflage Effect: Monochoromatic	Camouflage Effect: Complementary	Camouflage Effect: Analogous	Legibility Effect: Warm	Legibility Effect: Cool	Legibility Effect: Achromatic	Legibility Effect: Monochoromatic	Legibility Effect: Complementary	Legibility Effect: Analogous	Weight, Scale and Dimensional Effect: Warm	Weight, Scale and Dimensional Effect: Cool	Weight, Scale and Dimensional Effect: Achromatic	Weight, Scale and Dimensional Effect: Monochoromatic	Weight, Scale and Dimensional Effect: Complementary	Weight, Scale and Dimensional Effect: Analogous
Type A	A1	Structural			X						X						X				X		X			
		Furnitures and Fixtures	X												X											
	A2	Structural									X						X				X		X			
		Furnitures and Fixtures		X												X	X									
	A3	Structural			X						X				X		X				X		X			
		Furnitures and Fixtures													X		X									
Type B	B1	Structural									X						X				X		X			
		Furnitures and Fixtures	X	X											X	X				X						
	B2	Structural			X						X				X		X				X		X			
		Furnitures and Fixtures													X	X	X									
	B3	Structural							X						X		X				X		X			
		Furnitures and Fixtures		X											X	X	X									
Type C	C1	Structural									X				X						X		X			
		Furnitures and Fixtures	X												X		X		X							
	C2	Structural									X				X		X						X			
		Furnitures and Fixtures		X											X	X	X									
	C3	Structural													X		X				X		X			
		Furnitures and Fixtures	X												X		X									
Type D	D1	Structural									X						X						X			
		Furnitures and Fixtures													X		X									
	D2	Structural							X						X		X				X		X			
		Furnitures and Fixtures	X												X	X	X		X	X						
	D3	Structural									X				X		X				X		X			
		Furnitures and Fixtures	X												X	X	X		X	X						

DINING ROOM

Types of Houses	Number of Houses	Name of Elements	Sign Effect: Warm	Sign Effect: Cool	Sign Effect: Achromatic	Sign Effect: Monochoromatic	Sign Effect: Complementary	Sign Effect: Analogous	Camouflage Effect: Warm	Camouflage Effect: Cool	Camouflage Effect: Achromatic	Camouflage Effect: Monochoromatic	Camouflage Effect: Complementary	Camouflage Effect: Analogous	Legibility Effect: Warm	Legibility Effect: Cool	Legibility Effect: Achromatic	Legibility Effect: Monochoromatic	Legibility Effect: Complementary	Legibility Effect: Analogous	Weight, Scale and Dimensional Effect: Warm	Weight, Scale and Dimensional Effect: Cool	Weight, Scale and Dimensional Effect: Achromatic	Weight, Scale and Dimensional Effect: Monochoromatic	Weight, Scale and Dimensional Effect: Complementary	Weight, Scale and Dimensional Effect: Analogous
Type A	A1	Structural									X				X		X				X		X			
		Furnitures and Fixtures													X		X									
	A2	Structural									X				X		X				X		X			
		Furnitures and Fixtures		X											X	X	X									
	A3	Structural									X				X		X				X		X			
		Furnitures and Fixtures													X		X									
Type B	B1	Structural									X				X		X				X		X			
		Furnitures and Fixtures			X										X	X	X									
	B2	Structural									X				X		X						X			
		Furnitures and Fixtures		X											X	X	X									
	B3	Structural							X						X		X				X		X			
		Furnitures and Fixtures													X		X									
Type C	C1	Structural																								
		Furnitures and Fixtures																								
	C2	Structural							X								X						X			
		Furnitures and Fixtures													X		X			X						
	C3	Structural													X		X				X		X			
		Furnitures and Fixtures	X												X		X									
Type D	D1	Structural															X						X			
		Furnitures and Fixtures			X										X		X									
	D2	Structural							X						X		X				X		X			
		Furnitures and Fixtures	X												X	X	X		X							
	D3	Structural									X				X		X				X		X			
		Furnitures and Fixtures															X									

KITCHEN

Types of Houses	Number of Houses	Name of Elements	Sign Effect: Warm	Sign Effect: Cool	Sign Effect: Achromatic	Sign Effect: Monochoromatic	Sign Effect: Complementary	Sign Effect: Analogous	Camouflage Effect: Warm	Camouflage Effect: Cool	Camouflage Effect: Achromatic	Camouflage Effect: Monochoromatic	Camouflage Effect: Complementary	Camouflage Effect: Analogous	Legibility Effect: Warm	Legibility Effect: Cool	Legibility Effect: Achromatic	Legibility Effect: Monochoromatic	Legibility Effect: Complementary	Legibility Effect: Analogous	Weight, Scale and Dimensional Effect: Warm	Weight, Scale and Dimensional Effect: Cool	Weight, Scale and Dimensional Effect: Achromatic	Weight, Scale and Dimensional Effect: Monochoromatic	Weight, Scale and Dimensional Effect: Complementary	Weight, Scale and Dimensional Effect: Analogous
Type A	A1	Structural									X				X		X				X		X			
		Furnitures and Fixtures															X									
	A2	Structural									X				X		X				X		X			
		Furnitures and Fixtures													X	X	X									
	A3	Structural									X				X		X				X		X			
		Furnitures and Fixtures	X												X		X									
Type B	B1	Structural							X						X		X				X		X			
		Furnitures and Fixtures			X										X	X	X			X						
	B2	Structural									X				X		X						X			
		Furnitures and Fixtures			X										X		X									
	B3	Structural							X						X		X				X		X			
		Furnitures and Fixtures													X		X									
Type C	C1	Structural															X				X		X			
		Furnitures and Fixtures		X	X											X	X									
	C2	Structural															X						X			
		Furnitures and Fixtures		X											X	X	X									
	C3	Structural													X		X				X		X			
		Furnitures and Fixtures	X												X		X									
Type D	D1	Structural									X						X						X			
		Furnitures and Fixtures			X												X									
	D2	Structural									X				X		X				X		X			
		Furnitures and Fixtures													X	X	X									
	D3	Structural									X				X		X				X		X			
		Furnitures and Fixtures	X												X		X									

According to table 29, the sign effect was used in structural elements in % 16 houses in with achromatic colours. Achromatic colours were preferred for the sign effect in all houses' structural surfaces.

In living rooms, sign effect was used on furniture and fixtures in %50 houses in with warm colours. The sign effect was used on living room furniture and fixtures in % 33 houses in with cool colours.

In dining rooms, sign effect was used on furniture and fixtures in %16 houses in with warm colours. The sign effect was used on dining room furniture and fixtures in %16 houses in with cool colours. The sign effect was used on dining room furniture and fixtures in %16 houses in with achromatic colours.

In Kitchen, sign effect was used on furniture and fixtures in %25 houses in with warm colours. The sign effect was used on kitchen furniture and fixtures in %16 houses in with cool colours. The sign effect was used on kitchen furniture and fixtures in %33 houses in with achromatic colours.

The Camouflage effect was used in only structural elements in %100 houses. The camouflage effect is used in all homes to hide structural elements such as beams and columns. Achromatic and warm colours were preferred for the camouflage effect in all houses. The camouflage effect was never used for home furniture and fixtures.

The legibility effect was used in structural elements and “furniture and fixtures” in all houses. Achromatic and warm colours were preferred for legibility effect in all houses' structural surfaces. Only %25 houses of them used analogous, cool and complementary colours to create a legibility effect on furniture and fixtures. The scale and distance effect was used in structural elements in %100 houses in with achromatic and warm colours.

Table 30: Percentages Findings of Colour and Effects

Living Room	Structural Elements						Plugins					
	Warm	Cool	Achromatic	Monochromatic	Analogous	Complementary	Warm	Cool	Achromatic	Monochromatic	Analogous	Complementary
Sign Effect			%16,6				%50	%33.3				
Camouflage Effect	%16,6		%75									
Legibility Effect	%66,6		%91,6				%91,6	%58,3	%83,3		%25	%25
Scale and Distance Effect	%83,3		%100									
Dining Room	Warm	Cool	Achromatic	Monochromatic	Analogous	Complementary	Warm	Cool	Achromatic	Monochromatic	Analogous	Complementary
Sign Effect							%16,6	%16,6	%16,6			
Camouflage Effect	%25		%50									
Legibility Effect	%75		%83,3				%91,6	%16,6	%91,6		%8,3	%8,3
Scale and Distance Effect	%66,6		%91,6									
Kitchen	Warm	Cool	Achromatic	Monochromatic	Analogous	Complementary	Warm	Cool	Achromatic	Monochromatic	Analogous	Complementary
Sign Effect							%25	%16,6	%33,3			
Camouflage Effect	%16,6		%58,3									
Legibility Effect	%75		%100				%75	%33,3	%100		%8,3	
Scale and Distance Effect	%75											

General remarkable findings at the end of the study are as follows;

• Only warm and achromatic colours are used to create perceptual effects in structural elements. Achromatic colours are preferred more than warm colours.

• In structural elements, the sign effect has been created only in living rooms.

• In structural elements, the camouflage effect is created only on column and beam surfaces.

• Light shades of warm colour groups were generally preferred for the materials used on the ground. The light colours used on the ground caused the area to be perceived wider than it was.

• Using the white colour on the ceiling surfaces of all analyzed houses caused the ceiling to be perceived higher than it is.

• Mostly achromatic, warm, cool, analogous and complementary colours were used in order to create perceptual effects in furnitures and fixtures.

• In structural elements and “furnitures and fixtures”, monochromatic colours have never been used.

Chapter 5

CONCLUSION

Houses are structures that meet the sheltering needs of people since ancient times that provide the opportunity both to carry out vital activities and to meet the needs of people. The main vital requirements in a houses are sitting, sleeping, working, socializing, cooking, eating and cleaning. The changes in these vital needs led to the formation of different houses areas. The areas where activities such as sitting, socializing, cooking, and eating take place are living spaces where users share with other users and guests of the house are the areas that most of the time is spent. In this thesis focused living areas of the houses. Colours used in the interior design of living spaces, create differences in the perception of the interior therefore directly affect user satisfaction.

According to the literature review and analysis made within the scope of the thesis, the colours used in the “structural elements” and “furniture and fixtures” that make up the interior can create perception differences such as wider or narrower, higher or lower, closer on the visual and dimensional perceptions of the interior spaces.

In this study, the colours used in the living spaces of the Saklı Kent mass housing and the effects of the colours on the perception of interior space were analyzed in depth with the observation method and assessments were made.

The colours used in the living areas of Saklı Kent Mass Housing Houses were analyzed with two literature information.

These informations of literature;

• Colour groups and colour schemes

• Effects of colour on interior spaces perception such as sign effect, legibility, camouflage, scale and distance effect.

In this study, answers to several research questions were sought in order to obtain correct results for the purpose of the study. Questions are as below:
Can effects such as "sign effect", "camouflage effect", "legibility effect", "scale and distance effect" be created using colour in the interior? If so, what needs to be done to create these effects? This question is the main question of the research.

However, when designing the interiors of mass housing, the colour is chosen at the last stage according to anonymous users. To investigate whether colour should be included in the interior design at the last stage or in the design phase is another subject questioned within the subject of this research.

According to observation on Literature review and Saklı Kent Mass Houses, Effect can be created such as sign effect, camouflage effect, readability, scale and distance with the using colour at interior spaces. The colours used in the interior affect the perception exactly and are not easy to use. It is not possible to create the desired interior perception without knowing the general characteristics of the colours.

Nowadays, houses have become a completed product, ready for users. Colour choices are made by construction companies randomly in the mass housing due to the increasing need for shelter, without paying attention on the effects of colour on interior space perception. The colours used in the structural elements of the houses and "furnitures and fixtures" should be considered as a whole and should be selected by the interior architect and the user during the design phase of the house. The user must be included in this process when making colour choices in the interior design of the houses. If the user is included in the design phase, the perceptual effects desired in the interior space can be created by the interior architect with the colours chosen according to the taste of the user. The houses designed in this way have a longer life and users live happier in the houses.

To reach the result, using the qualitative research method, observation tables have been created to analyze the colour groups, colour schemes and the effects of colours on the interior space perception in the study area. After analyzing the colours used in the houses and the effects of colours on the perception of the interior space, numerical findings were obtained using the quantitative research method. These are summarized in table 29 in Chapter 4.

It is estimated that 4 of the 12 houses analyzed according to the researcher, were designed by the interior designer. It is estimated that the colour choices in these 4 houses are made consciously and aware of the effects of colours on the perception of the interior spaces. It is estimated that the colour preferences of the structural elements of the other analyzed 8 houses are made by the construction company, and the preferences of the furnitures and fixtures colours are made by the users according to their personal taste. In some houses, unconscious use of colour has caused chaos.

Without knowing the general characteristics of colours, it is not possible to create the desired interior perception. However, if the user were included in the design stage and the colour choices were made by interior architect, more accurate perceptual results could be achieved.

In order to give the correct results of the visual and dimensional effects provided by the colours in the interior spaces, the colours used in the structural elements and the colours to be used in the furnitures and fixtures should be decided together.

To create a sign effect in the interior, the recommended colour combinations are as follows.

• If the existing colour used in the interior is a colour from the warm colour group, a colour from the cold colour group or achromatic colours can be selected to create a sign effect.

• If the existing colour used in the interior is a colour from the cold colour group, a colour from the warm colour group or achromatic colours can be selected to create a sign effect.

• If the existing colour used in the interior is a colour from the monochromatic colour scheme, a colour from the contrast colour scheme can be used to create a sign effect.

• If the existing colour used in the interior is a colour from the achromatic colour scheme, one or more colours can be used from the colour wheel to create a sign effect.

• If the existing colour used in the interior is a colour from the complementary colour scheme, a colour from the achromatic colour scheme can be used to create a sign effect.

• If the existing colour used in the interior is a colour from the analogous colour scheme, a colour from the achromatic colour scheme can be used to create a sign effect.

• If the interior is very colourful, a colour from the achromatic colour scheme can be used to create a sign effect.

To create a camouflage effect in the interior, the recommended colour combinations are as follows.

• If the existing colour used in the interior is one of the warm colour groups, a colour from the warm colour scheme can be used to create a camouflage effect.
• If the existing colour used in the interior is one of the cold colour groups, a colour from the cold colour scheme can be used to create a camouflage effect.
• If the existing colour used in the interior is a colour from the achromatic colour scheme, a colour from the achromatic colour scheme can be used to create a camouflage effect.
• If the existing colour used in the interior is a colour from the monochromatic colour scheme, a colour from the monochromatic colour scheme can be used to create a camouflage effect.
• If the existing colour used in the interior is a colour from the complementary colour scheme, a colour from the complementary colour scheme can be used to create a camouflage effect.
• If the existing colour used in the interior is a colour from the analog colour scheme, a colour from the analog colour scheme can be used to create a camouflage effect.

To create a legibility effect in the interior, the recommended colour combinations are as follows.

• If the existing colour used in the interior is one of the warm colour groups, a colour from the cold colour scheme can be used to create a legibility effect.

• If the existing colour used in the interior is one of the cold colour groups, a colour from the warm colour scheme can be used to create a legibility effect.

• If the existing colour used in the interior is one of the monochromatic colour scheme, any other colour can be used to create a legibility effect.

To create a scale and distance effect in the interior, the recommended colour combinations are as follows.

• In a high ceiling interior, a colour and dark colour values can be selected from the warm group for lower perception of ceiling height.

• In an interior with low ceiling, a colour and light colour values can be selected from the cold group for higher perception of ceiling height.

• If a warm colour group and dark colour values are used on the walls of the interior, the walls are perceived closer.

• If a colour and light colour values from the cold colour group are used on the walls of the interior, the walls are perceived further.

• If a colour and dark colour values from the warm colour group are used on the floor of the interior, the interior is perceived narrower.

• If a colour and light colour values from the cold colour group are used on the floor of the interior, the interior is perceived more broadly.

The colours to be used in the interior spaces must be determined at the design stage of the building. After the design process is over, the selected colours cause chaos. It should be user is included when making colour choices in houses interior design. If the user is included in the design phase, desired effects can be created in the interior with the colours chosen according to the taste of the user. The spaces designed in this way have a longer life and users can live much happier. This study aimed to show to interior designers, users, construction companies and architecture students that unconscious use of colour causes chaos in the interior therefore they should be sensitive.

In this study, the effects of colour on the perception of interior space were analyzed with the knowledge of the researcher over the colours used in existing houses, and the colours and perceptual effects were evaluated.

In the future recommodation of the study, 3D models of houses can be drawn, different visual and dimensional perception variations are created with colours, and users can be asked about their perceptive feelings along with the survey questions. In addition, factors affecting colour choices such as user identity, trend / fashion, climate, culture can be survey with questionnaire questions to obtain more accurate perceptual results.

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APPENDICES

Appendix 1: Findings of Color Uses and Color Effects on House A2

TYPE A

TYPE B

TYPE C

TYPE D

TYPE A2

DESIGNER

BY USER

BY ARCHITECT

BY CONSTRUCTION FIRM

LIVING ROOM

STRUCTURAL ELEMENTS

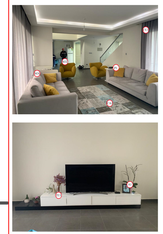
1	Wall 1 (W1)	#dbd1b3
2	Wall 2 (W2)	#dbd1b3
3	Wall 3 (W3)	#dbd1b3
4	Wall 4 (W4)	#dbd1b3
5	Beam 1 (B1)	#dbd1b3
6	Beam 2 (B2)	#dbd1b3
7	Stair	#dbd1b3
8	Floor	#595549
9	Ceiling	#e9e3da

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

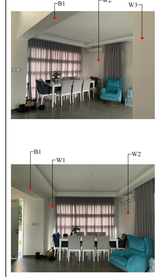
FURNITURES AND FIXTURES



1	Sofa 1 (SO1)	#a7dcd1
2	Sofa 2 (SO2)	#a8c6c3a
3	Pillow 1 (P1)	#a8c6c3a
4	TV Unit 1 (TU1)	#d5d2cd
5	Curtain 1(CU1)	#727473
6	Accessories 1(A1)	#020708a
7	Carpet 1(CA1)	#969f9a

DINING ROOM

STRUCTURAL ELEMENTS



1	Wall 1 (W1)	#dbd1b3
2	Wall 2 (W2)	#dbd1b3
3	Wall 3 (W3)	#dbd1b3
4	Beam 1 (B1)	#dbd1b3
5	Floor	#595549
6	Ceiling	#e9e3da
7	Door	#cccbbf

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Dining Room Structural Elements

Analysis of the Amount of Color Types on Dining Room Plugin Elements

FURNITURES AND FIXTURES

1	Dining Table (DT1)	#d5d9ca
2	Chair 1 (CH1)	#939ddf
3	Chair 2 (CH2)	#202526
4	Sofa 3 (SO3)	#21747c
5	Curtain 1(CU1)	#727473

KITCHEN

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#e7dcd1
2	Wall 2 (W2)	#e7dcd1
3	Wall 3 (W3)	#d3d5ca
4	Beam 1 (B1)	#d3d5ca
5	Floor	#595549
6	Ceiling	#e9e3da

AMOUNT OF COLOUR TYPES

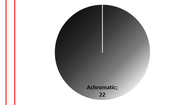
Analysis of the Amount of Color Types on Kitchen Structural Elements

Analysis of the Amount of Color Types on Kitchen Plugin Elements

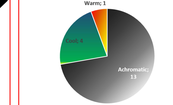
FURNITURES AND FIXTURES

1	Kitchen Cabinet 1 (KC1)	#ada487
2	Kitchen Ceramic	#5c5e59
3	Kitchen Worktop	#bdbdb7
4	Dining Table 2 (DT2)	#bebfb7
5	Curtain 2(CU2)	#919186
6	Chair 3(CH3)	#cacbae

GENERAL COLOUR ANALYSIS



Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (A2)

LIVING ROOM																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Illegible	Legible	Legible	Legible	Legible	Legible			Illegible	Illegible					Illegible	Illegible	
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Narrow											

Table 2: The Effects of Colours Used in Living Room Furnitures Elements on the Perception of Space (A2)

LIVING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Illegible	Legible				Illegible												
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (A2)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible			Legible							Legible					Legible		
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (A2)

DINING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Illegible	Legible	Legible	Legible	Legible	Legible			Illegible							Illegible	Illegible
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Narrow											

Table 5: The Effects of Colours Used in Dining Room Fixtures Elements on the Perception of Space (A2)

DINING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect			Legible					Illegible		Legible	Legible							
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (A2)

DINING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible																	
Scale and Distance Effect																		

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (A2)

KITCHEN																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible		Legible			Illegible							Illegible	
Scale and Distance Effect	High	Near Narrow	Near Narrow	Wide		Narrow											

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (A2)

KITCHEN																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN	KITCHEN
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3	WORKTOP	CERAMIC
Sign Effect																		
Camouflage Effect																		
Legibility Effect									Illegible			Illegible		Legible			Illegible	Legible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (A2)

KITCHEN																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible																	
Scale and Distance Effect																		

Appendix 2: Findings of Color Uses and Color Effects on House A3

TYPE A

TYPE B

TYPE C

TYPE D

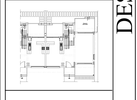
DESIGNER

BY USER

BY ARCHITECT

BY CONSTRUCTION FIRM

TYPE A2



LIVING ROOM

STRUCTURAL ELEMENTS

1 Wall 1 (W1) #e8dbc5

2 Wall 2 (W2) #6a6a68

3 Wall 3 (W3) #e8dbc5

4 Wall 4 (W4) #e8dbc5

5 Beam 1 (B1) #e8dbc5

6 Beam 2 (B2) #e8dbc5

7 Ceiling #eeeedf

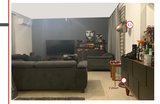
8 Floor #6d7c5e

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

FURNITURES AND FIXTURES



1 TV Unit (TU1) #513011

2 Sofa 1 (SO1) #3a3b2b

3 Cabinet #3b3221

4 Coffee Table 1 (CT1) #513011

5 Coffee Table 2 (CT2) #513011

6 Curtain 1 (CU1) #bdb49b

7 Pillow 1 (P1) #1a1a1d

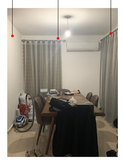
8 Pillow 2 (P2) #3a382b

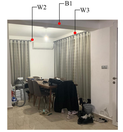
9 Carpet 1 (CA1) #7a6d50

10 Lighting 1 (L1) #dfcb66

DINING ROOM

STRUCTURAL ELEMENTS





1 Wall 1 (W1) #e0d5c3

2 Wall 2 (W2) #e0d5c3

3 Wall 3 (W3) #e0d5c3

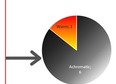
4 Wall 4 (W4) #e0d5c3

5 Beam 1 (B1) #e0d5c3

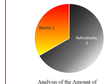
6 Ceiling #eeeedf

7 Floor #8d7c5e

AMOUNT OF COLOUR TYPES

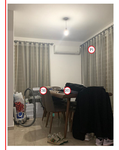


Analysis of the Amount of Color Types on Dining Room Structural Elements



Analysis of the Amount of Color Types on Dining Room Plugin Elements

FURNITURES AND FIXTURES



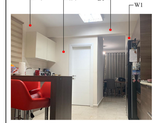
1 Curtain 1 (CU1) #beb49b

2 Dining Table 1 (CT1) #30281d

3 Chair 1 (CH1) #3422a

KITCHEN

STRUCTURAL ELEMENTS



1 Wall 1 (W1) #e0d5c3

2 Wall 2 (W2) #e0d5c3

3 Wall 3 (W3) #e0d5c3

4 Wall 4 (W4) #e0d5c3

5 Beam 1 (B1) #e0d5c3

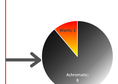
6 Ceiling #e5e4e3

7 Floor #b9b09f

8 Door #c7c6c1

9 Windows #e6e6e9

AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Kitchen Structural Elements

Analysis of the Amount of Color Types on Kitchen Plugin Elements

FURNITURES AND FIXTURES

1 Kitchen Cabinet 1 (KC1) #7be6c5

2 Kitchen Cabinet 2 (KC2) #d2c4a9

3 Kitchen Worktop #e8ddd4

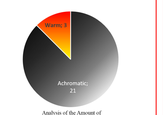
4 Kitchen Ceramic #c4b8a8

5 Dining Table 2 (DT2) #7be653

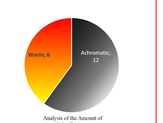
6 Chair 2 (CH2) #f2281e

7 Curtain 1(CU1) #9b9c7e

GENERAL COLOUR ANALYSIS



Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

Achromatic

Warm

Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (A3)

LIVING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible	Illegible							
Scale and Distance Effect	High	Far Wide	Near	Far Wide	Far Wide	Wide											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (A3)

LIVING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible		Legible	Legible	Legible												
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (A3)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible			Illegible	Illegible				Legible	Legible	Legible	Legible	Legible			Legible		
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (A3)

DINING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible								
Scale and Distance Effect	High	Far Wide	Far Wide	Far Wide	Far Wide	Wide											

Table 5: The Effects of Colours Used in Dining Room Fixtures Elements on the Perception of Space (A3)

DINING ROOM																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect								Legible		Legible								
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (A3)

DINING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible																	
Scale and Distance Effect																		

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (A3)

KITCHEN																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible							Legible	
Scale and Distance Effect	High	Far Wide	Far Wide	Far Wide	Far Wide	Wide											

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (A3)

KITCHEN																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect									Legible		Legible			Legible	Legible		Legible	Legible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (A3)

KITCHEN																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible																	
Scale and Distance Effect																		

Appendix 3:Findings of Color Uses and Color Effects on House B1

NO: 41

TYPE 1

TYPE 2

TYPE 3

TYPE 4

DESIGNER

BY USER

BY ARCHITECT

BY CONSTRUCTION FIRM

LIVING ROOM

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#e8e4c9
2	Wall 2 (W2)	#e8e4c3
3	Wall 3 (W3)	#e8e4c3
4	Wall 4 (W4)	#e8e4c3
5	Beam 1 (B1)	#e8e4c3
6	Ceiling	#ebe9df
7	Floor	#d4caba

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

PLUGIN ELEMENTS

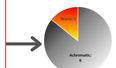
1	Sofa 1 (SO1)	#d1cac1
2	Sofa 2 (SO2)	#d1cac1
3	TV Unit 1 (TU1)	#684d2b
4	Coffee Table 1 (CT1)	#2a1d15
5	Coffee Table 2 (CT2)	#2a1d15
6	Pillow 1 (P1)	#777245
7	Pillow 2 (P2)	#54f630
8	Curtain 1(CU1)	#79928f
9	Curtain 2(CU2)	#e9f5af
10	Accessories 1(A1)	#8d5e4c
11	Accessories 2(A2)	#482d18
12	Accessories 3(A3)	#7fb793
13	Lighting 1(L1)	#957a5c
14	Carpet 1(CA1)	#624446

DINING ROOM

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#e8e4c3
2	Wall 2 (W2)	#e8e4c3
3	Wall 3 (W3)	#e8e4c3
4	Beam 1 (B1)	#e8e4c3
5	Beam 2 (B2)	#e8e4c3
6	Ceiling	#ebe9df
7	Floor	#d4caba

AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Dining Room Structural Elements

Analysis of the Amount of Color Types on Dining Room Plugin Elements

PLUGIN ELEMENTS

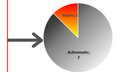
1	Chair 1 (CH1)	#f3f5d2
2	Curtain 1 (CU1)	#79928f
3	Curtain 2 (CU2)	#e9f5af
4	Accessories 4(A4)	#a38c68
5	Accessories 5(A5)	#685550 #222625
6	Lighting 2(L2)	#957a5c
7	Cabinet	#a8a995
8	Seperate (Diğer)	#563431c

KITCHEN

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#e7e6e2
2	Wall 2 (W2)	#e7e6e2
3	Wall 3 (W3)	#e7e6e2
4	Wall 4 (W4)	#e7e6e2
5	Beam 1 (B1)	#e7e6e2
6	Windows	#d5d4cf
7	Ceiling	#e7e6e2
8	Floor	#d2c6b4

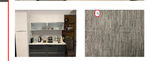
AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Kitchen Structural Elements

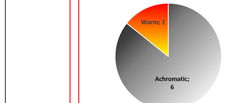
Analysis of the Amount of Color Types on Kitchen Plugin Elements

PLUGIN ELEMENTS

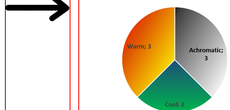


1	Kitchen Cabinet 1 (KC1)	#f1eee6
2	Kitchen Cabinet 2 (KC2)	#171612
3	Kitchen Worktop	#dad1b3
4	Kitchen Ceramic	#d8c9b0
5	Carpet 2(CA2)	#9591d8
6	Curtain 3(CU3)	#a9d3c6

GENERAL COLOUR ANALYSIS



Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (B1)

LIVING ROOM																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Illegible											
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Wide											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (B1)

LIVING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Illegible	Illegible				Legible		Illegible		Illegible								
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (B1)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible			Legible	Legible						Legible	Legible	Legible			Legible		
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (B1)

DINING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible		Illegible											
Scale and Distance Effect	High	Wide	Wide	Wide		Wide											

Table 5: The Effects of Colours Used in Dining Room Fixtures Elements on the Perception of Space (B1)

DINING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect								Illegible		Illegible			Legible					
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (B1)

DINING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible													Legible	Legible			
Scale and Distance Effect																		

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (B1)

KITCHEN																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Illegible	Illegible	Illegible	Illegible	Legible			Illegible								
Scale and Distance Effect	High	Wide	Wide	Wide		Wide											

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (B1)

KITCHEN																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect														Legible	Illegible		Illegible	Legible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (B1)

KITCHEN																		
Other Plugin Elements	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect			Illegible														Legible	
Scale and Distance Effect																		

Appendix 4: Findings of Color Uses and Color Effects on House B2

TYPE A

TYPE B

TYPE C

TYPE D

TYPE B2

DESIGNER

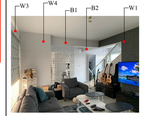
BY USER

BY ARCHITECT

BY CONSTRUCTION FIRM

LIVING ROOM

STRUCTURAL ELEMENTS



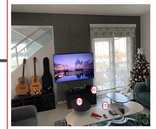
1		Wall 1 (W1) #3b3d30
2		Wall 2 (W2) #d3d1ce
3		Wall 3 (W3) #d3d1ce
4		Wall 4 (W4) #d3d1ce
5		Beam 1 (B1) #d3d1ce
6		Beam 2 (B2) #d3d1ce
7		Ceiling #ebe9df
8		Floor #e4d6b4
9		Windows #ecebe6
10		Stair #ebe9df

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

FURNITURES AND FIXTURES



1		Sofa 1 (SO1) #626815e
2		Sofa 2 (SO2) #304e53
3		TV Unit 1 (TU1) #1d1713
4		Coffee Table 1 (CT1) #201f25
5		Coffee Table 2 (CT2) #efefef8
6		Pillow 1 (P1) #626815e
7		Pillow 2 (P2) #304e53
8		Curtain 1(CU1) #8ca9a8
9		Carpet 1(CA1) #2d5062

DINING ROOM

STRUCTURAL ELEMENTS

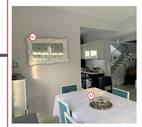
1		Wall 1 (W1) #d3d1ce
2		Wall 2 (W2) #d3d1ce
3		Wall 3 (W3) #d3d1ce
4		Beam 1 (B1) #d3d1ce
5		Beam 2 (B2) #d3d1ce
6		Ceiling #ebe9df
7		Floor #e4d6b4
8		Windows #ecebe6

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Dining Room Structural Elements

Analysis of the Amount of Color Types on Dining Room Plugin Elements

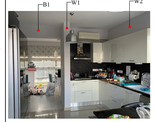
FURNITURES AND FIXTURES



1		Curtain 1(CU1) #8ca9a8
2		Dining Table 1 (DT1) #d8d5ce
3		Chair 1(CH1) #204549a
4		Cabinet #6c6e6b
5		Lighting 1 (L1) #77663b
6		Accessories 1 (A1) #635f53
7		Accessories 2 (A2) #e1dac8
8		Accessories 3 (A3) #aaa295

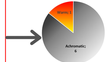
KITCHEN

STRUCTURAL ELEMENTS



1		Wall 1 (W1) #d3d1ce
2		Wall 2 (W2) #d3d1ce
3		Wall 3 (W3) #d3d1ce
4		Wall 4 (W4) #d3d1ce
5		Beam 1 (B1) #d3d1ce
6		Ceiling #ebe9df
7		Floor #e4d6b4

AMOUNT OF COLOUR TYPES



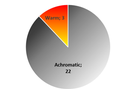
Analysis of the Amount of Color Types on Kitchen Structural Elements

Analysis of the Amount of Color Types on Kitchen Plugin Elements

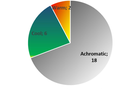
FURNITURES AND FIXTURES

1		Kitchen Cabinet 1 (KC1) #dcd5c8
2		Kitchen Cabinet 2 (KC2) #323639
3		Kitchen Ceramic #2a2927
4		Kitchen Worktop #000201
5		Chair 2 (CH2) #010206
6		Dining Table 2 (DT2) #000201
7		Lighting 2 (L2) #7f7c74
8		Curtain 2 (CU2) #b8b3ad
9		Carpet 2 (CA2) #656666

GENERAL COLOUR ANALYSIS



Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (B2)

LIVING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Illegible			Illegible	Illegible					Legible	Legible	
Scale and Distance Effect	High	Near	Far	Far	Far	Wide											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (B2)

LIVING ROOM																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN	KITCHEN
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3	WORKTOP	CERAMIC
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible		Legible	Legible	Legible												
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (B2)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible			Legible	Legible											Legible		
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (B2)

DINING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible		Illegible			Illegible	Illegible						Legible	Legible
Scale and Distance Effect	High	Far	Far	Far		Wide											

Table 5: The Effects of Colours Used in Dining Room Fixtures Elements on the Perception of Space (B2)

DINING ROOM																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect								Legible		Legible			Legible					
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (B2)

DINING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible										Legible	Legible	Legible					
Scale and Distance Effect																		

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (B2)

KITCHEN																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible							Legible	
Scale and Distance Effect	High	Far	Far	Far	Far	Wide											

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (B2)

KITCHEN																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE	CHAIR			CABINET	KITCHEN CABINET			KITCHEN	KITCHEN
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3	WORKTOP	CERAMIC
Sign Effect																		
Camouflage Effect																		
Legibility Effect									Legible		Legible			Legible	Legible		Illegible	Illegible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (B2)

KITCHEN																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect		Legible								Legible							Legible	
Scale and Distance Effect																		

Appendix 5: Findings of Color Uses and Color Effects on House B3

TYPE A

TYPE B

TYPE C

TYPE D

TYPE B3

DESIGNER

BY USER

BY ARCHITECT

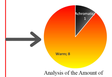
BY CONSTRUCTION FIRM

LIVING ROOM

STRUCTURAL ELEMENTS

1 Wall 1 (W1) #ddcab2
2 Wall 2 (W2) #ddcab2
3 Wall 3 (W3) #ddcab2
4 Wall 4 (W4) #ddcab2
5 Beam 1 (B1) #ddcab2
6 Beam 2 (B2) #ddcab2
7 Ceiling #ebefd8
8 Floor #c8baa6
9 Stair #ddcab2

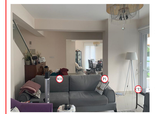
AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

FURNITURES AND FIXTURES



1 Sofa 1 (SO1) #797b7a
2 Sofa 2 (SO2) #6b556d
3 TV Unit 1 (TU1) #3a3a3a
4 Coffee Table 1 (CT1) #3a3a3a
5 Coffee Table 2 (CT2) #3a3a3a
6 Curtain 1(CU1) #dcd1b3
7 Pillow 1 (P1) #dacdbc
8 Carpet 1(CA1) #b1a899
9 Lighting 1(L1) #d5c5b3
10 Lighting 2(L2) #8d7d63
11 Accessories 1(A1) #8d7d63
12 Accessories 2(A2) #e7e9e6
13 Accessories 3(A3) #6e5b54

DINING ROOM

STRUCTURAL ELEMENTS

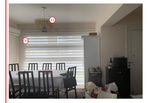
1 Wall 1 (W1) #ddcab2
2 Wall 2 (W2) #ddcab2
3 Wall 3 (W3) #ddcab2
4 Wall 4 (W4) #ddcab2
5 Beam 1 (B1) #ddcab2
6 Ceiling #ebefd8
7 Floor #c8baa6

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Dining Room Structural Elements

Analysis of the Amount of Color Types on Dining Room Plugin Elements

FURNITURES AND FIXTURES



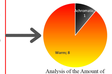
1 Dining Table (CT1) #d8d3d0
2 Chair 1 (CH1) #2a2a2a
3 Chair 2 (CH2) #6da09b
4 Curtain 1 (CU1) #dcd1b3
5 Carpet 2(CA2) #5f2f21 #4d1f20 #936658
6 Cabinet #2a2a2a
7 Lighting 1 (L1) #bd7de3

KITCHEN

STRUCTURAL ELEMENTS

1 Wall 1 (W1) #ddcab2
2 Wall 2 (W2) #ddcab2
3 Wall 3 (W3) #ddcab2
4 Wall 4 (W4) #ddcab2
5 Ceiling #ebefd8
6 Floor #c8baa6
7 Beam 1 (B1) #ddcab2
8 Beam 2 (B2) #ddcab2
9 Windows #eaeb4a

AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Kitchen Structural Elements

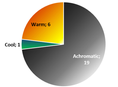
Analysis of the Amount of Color Types on Kitchen Plugin Elements

FURNITURES AND FIXTURES

1 Kitchen Cabinet 1 (KC1) #9f9687
2 Kitchen Ceramic #8c7550 #938b7e
3 Kitchen Worktop #d2d5d8
4 Dining Table 2 (DT2) #d2d5d8
5 Chair 3 (CH3) #d9dcd3
6 Curtain 1 (CU1) #b2a19a

GENERAL COLOUR ANALYSIS

Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

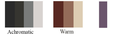


Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (B3)

LIVING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible	Illegible					Illegible		
Scale and Distance Effect	Illigh	Far Wide	Far Wide	Far Wide	Far Wide	Wide											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (B3)

LIVING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible		Legible	Legible	Legible												
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (B3)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Illegible			Legible					Legible	Legible	Legible	Legible	Legible			Illegible		
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (B3)

DINING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR	
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3				
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible	Illegible								
Scale and Distance Effect	High	Far Wide	Far Wide	Far Wide	Far Wide	Wide												

Table 5: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (B3)

DINING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect								Legible		Legible	Legible		Legible					
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (B3)

DINING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Illegible								Legible							Legible		
Scale and Distance Effect																		

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (B3)

KITCHEN																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible	Illegible						Legible	
Scale and Distance Effect	High	Far Wide	Far Wide	Far Wide	Far Wide	Wide											

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (B3)

KITCHEN																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect									Legible			Legible		Legible			Legible	Legible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (B3)

KITCHEN																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible																	
Scale and Distance Effect																		

Appendix 6: Findings of Color Uses and Color Effects on House C1

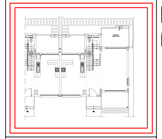
TYPE A

TYPE B

TYPE C

TYPE D

TYPE C1



DESIGNER

BY USER

BY ARCHITECT

BY CONSTRUCTION FIRM

LIVING ROOM

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#e6d6c1
2	Wall 2 (W2)	#e6d6c1
3	Wall 3 (W3)	#e6d6c1
4	Wall 4 (W4)	#e6d6c1
5	Beam 1 (B1)	#6a6965
6	Ceiling	#f3eee8
7	Floor	#c9bead

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

FURNITURES AND FIXTURES

1	Sofa 1 (SO1)	#9f4135
2	Sofa 2 (SO2)	#9e866c
3	TV Unit 1 (TU1)	#e7e5de
4	Coffee Table 1 (CT1)	#d8d8d2
5	Lighting 1(LL1)	#a43136
6	Lighting 2(L2)	#e3d8cb
7	Curtain 1(CU1)	#998f76
8	Accessories 1(A1)	#181b1c
9	Accessories 2(A2)	#568190
10	Pillow 1 (P1)	#e4d6bc
11	Pillow 2 (P2)	#ccb297
12	Pillow 3 (P3)	#eaece7

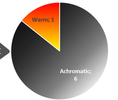
DINING ROOM & KITCHEN

STRUCTURAL ELEMENTS

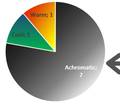
The effects of colors used in dining room furniture on the perception of space

1	Wall 1 (W1)	#f3efe8
2	Wall 2 (W2)	#f3efe8
3	Wall 3 (W3)	#f3efe8
4	Wall 4 (W4)	#f3efe8
5	Ceiling	#f3eee8
6	Floor	#c9bead
7	Door	#e9e8e6

AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Kitchen Structural Elements



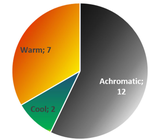
Analysis of the Amount of Color Types on Kitchen Plugin Elements

FURNITURES AND FIXTURES

1	Kitchen Cabinet 1 (KC1)	#6e7330
2	Kitchen Cabinet 2 (KC2)	#eee8df
3	Kitchen Cabinet 3 (KC3)	#eee8df
4	Dining Table 1 (DT1)	#ebe9e4
5	Kitchen Worktop	#5e5b54
6	Kitchen Ceramic	#eae7e3
7	Curtain 2(CU2)	#615648
8	Chair 1(CH1)	#090d18
9	Accessories 3(A3)	#c6c6be

GENERAL COLOUR ANALYSIS

Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

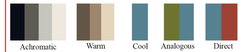


Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (C1)

LIVING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible						Illegible		Illegible
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Wide											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (C1)

LIVING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible		Illegible		Illegible							Illegible					
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (C1)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible			Legible	Legible	Legible			Legible	Illegible	Legible	Legible						
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room and Kitchen Structural Elements on the Perception of Space (C1)

KITCHEN																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible										Illegible	Illegible
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Wide											

Table 5: The Effects of Colours Used in Dining Room and Kitchen Fixtures Elements on the Perception of Space (C1)

KITCHEN																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect								Illegible		Legible				Legible	Illegible	Illegible	Legible	Illegible
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room and Kitchen Other Fixtures Elements on the Perception of Space (C1)

KITCHEN																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect		Legible											Illegible					
Scale and Distance Effect																		

Appendix 7:Findings of Color Uses and Color Effects on House C2

TYPE A

TYPE B

TYPE C

TYPE D

TYPE C2

DESIGNER

BY CONSTRUCTION FIRM

BY ARCHITECT

BY USER

LIVING ROOM

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#a1948b
2	Wall 2 (W2)	#a1948b
3	Wall 3 (W3)	#a1948b
4	Wall 4 (W4)	#a1948b
5	Beam 1 (B1)	#a1948b
6	Ceiling	#dadad8
7	Floor	#4e4b4a
8	Windows	#dadbcd
9	Door	#dddbc6

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

FURNITURES AND FIXTURES

1	Curtain 1(CU1)	#e2e3dd
2	Sofa 1(SO1)	#d9cbb1
3	Pillow 1(P1)	#e4dbca
4	Pillow 2(P2)	#65455f
5	Carpet 1(CA1)	#462308
6	Lighting 1(L1)	#a59147
7	Accessories 1 (A1)	#8baa9c
8	Accessories 2 (A2)	#a3272f
9	TV Unit 1 (TU1)	#9d5923
10	Coffee Table 1 (CT1)	#9d5923

DINING ROOM

STRUCTURAL ELEMENTS

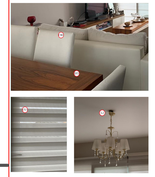
1	Wall 1 (W1)	#a1948b
2	Wall 2 (W2)	#a1948b
3	Beam 1 (B1)	#a1948b
4	Ceiling	#dadad8
5	Floor	#4e4b4a

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Dining Room Structural Elements

Analysis of the Amount of Color Types on Dining Room Plugin Elements

FURNITURES AND FIXTURES



1	Dining Table 1(DT1)	#634f2b
2	Chair 1(CH1)	#c7c5b8
3	Lighting 2(L2)	#a59147
4	Curtain 1(CU1)	#e2e3dd

KITCHEN

STRUCTURAL ELEMENTS

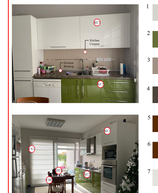
1	Wall 1 (W1)	#a1948b
2	Wall 2(W2)	#a1948b
3	Wall 3 (W3)	#a1948b
4	Wall 4 (W4)	#a1948b
5	Ceiling	#dadad8
6	Floor	#4e4b4a
7	Windows	#dadbcd

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Kitchen Structural Elements

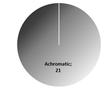
Analysis of the Amount of Color Types on Kitchen Plugin Elements

FURNITURES AND FIXTURES

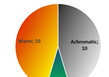


1	Kitchen Cabinet 1 (KC1)	#d4d4cc
2	Kitchen Cabinet 2(KC2)	#666d37
3	Kitchen Ceramic	#a19184
4	Kitchen Worktop	#4c433a
5	Dining Table 2 (DT2)	#572a03
6	Chair 2 (CH2)	#572a03
7	Curtain 1 (CU1)	#e2e3dd
8	Carpet 2 (CA2)	#c7bca6

GENERAL COLOUR ANALYSIS



Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

Achromatic

Warm

Cool

Analogous

Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (C2)

LIVING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible							Legible	Legible
Scale and Distance Effect	High	Far Wide	Far Wide	Far Wide	Far Wide	Narrow											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (C2)

LIVING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN	KITCHEN
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3	WORKTOP	CERAMIC
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Illegible			Legible		Legible												
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (C2)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Illegible			Illegible	Legible				Legible		Legible	Legible				Legible		
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (C2)

DINING ROOM																			
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible			Legible			Illegible								
Scale and Distance Effect	High	Far Wide	Far Wide			Narrow											

Table 5: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (C2)

DINING ROOM																			
FURNITURES	FURNITURES																		
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC	
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3			
Sign Effect																			
Camouflage Effect																			
Legibility Effect								Legible		Legible									
Scale and Distance Effect																			

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (C2)

DINING ROOM																			
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS			
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3	
Sign Effect																			
Camouflage Effect																			
Legibility Effect	Illegible									Legible									
Scale and Distance Effect																			

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (C2)

KITCHEN																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible										Legible	
Scale and Distance Effect	High	Far Wide	Far Wide	Far Wide	Far Wide	Narrow											

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (C2)

KITCHEN																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect									Legible		Legible			Legible	Legible		Legible	Legible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (C2)

KITCHEN																			
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Illegible																Legible	
Scale and Distance Effect																		

Appendix 8:Findings of Color Uses and Color Effects on House C3

TYPE A

TYPE B

TYPE C

TYPE D

TYPE C3

DESIGNER

BY USER

BY ARCHITECT

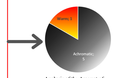
BY CONSTRUCTION FIRM

LIVING ROOM

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#d3bea6
2	Wall 2 (W2)	#d3bea6
3	Wall 3 (W3)	#d3bea6
4	Wall 4 (W4)	#d3bea6
5	Ceiling	#e6d7c1
6	Floor	#a0987b

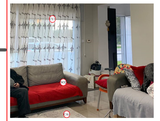
AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

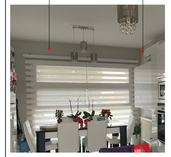
FURNITURES AND FIXTURES



1	Sofa 1 (SO1)	#4a4339
2	Sofa 2 (SO2)	#a92e31
3	TV Unit 1(TU1)	#ded7bb
4	Lighting 1(L1)	#9b8353
5	Curtain 1(CU1)	#e4dbd3
6	Carpet 1(CA1)	#a69381
7	Accessories 1(A1)	#a8a399
8	Accessories 2(A2)	#ea0000

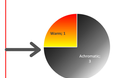
DINING ROOM

STRUCTURAL ELEMENTS



1	Wall 1 (W1)	#aaa09b
2	Wall 2 (W2)	#aaa09b
3	Ceiling	#dfdbce
4	Floor	#998a7c

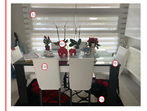
AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Dining Room Structural Elements

Analysis of the Amount of Color Types on Dining Room Plugin Elements

FURNITURES AND FIXTURES



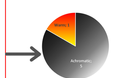
1	Dining Table 1(DT1)	#1d2523
2	Chair 1 (CH1)	#dcdbd2
3	Curtain 2 (CU2)	#c5cfdf
4	Carpet 2 (CA2)	#646605 #629d16 #e4f7bd
5	Accessories 3(A3)	#5d141a

KITCHEN

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#aaa09b
2	Wall 2 (W2)	#aaa09b
3	Wall 3 (W3)	#aaa09b
4	Wall 4 (W4)	#aaa09b
5	Ceiling	#dfdbce
6	Floor	#998a7c

AMOUNT OF COLOUR TYPES



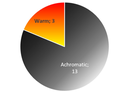
Analysis of the Amount of Color Types on Kitchen Structural Elements

Analysis of the Amount of Color Types on Kitchen Plugin Elements

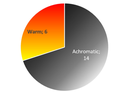
FURNITURES AND FIXTURES

1	Kitchen Cabinet 1 (KC1)	#e7e4d3
2	Kitchen Ceramic	#282828
3	Kitchen Worktop	#d5cfc5
4	Dining Table 2 (DT2)	#d3cfc5
5	Chair 2 (CH2)	#cf0f0f
6	Curtain 2 (CU2)	#c6cbbf
7	Lighting 1 (L1)	#3d3a33

GENERAL COLOUR ANALYSIS



Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (C3)

LIVING ROOM																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible											
Scale and Distance Effect	High	Far Wide	Far Wide	Far Wide	Far Wide	Wide											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (C3)

LIVING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible				Legible												
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (C3)

LIVING ROOM																		
FIXTURES	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible								Legible		Legible	Legible				Illegible		
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (C3)

DINING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible			Legible											
Scale and Distance Effect	High	Far Wide	Far Wide			Wide											

Table 5: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (C3)

DINING ROOM																			
FURNITURES	FURNITURES																		
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect								Legible		Legible								
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (C3)

DINING ROOM																		
FIXTURES	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect		Illegible											Legible				Legible	
Scale and Distance Effect																		

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (C3)

KITCHEN																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible											
Scale and Distance Effect	High	Far Wide	Far Wide	Far Wide	Far Wide	Wide											

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (C3)

KITCHEN																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect									Illegible		Legible			Legible			Illegible	Legible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (C3)

KITCHEN																		
FIXTURES	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect		Illegible							Legible									
Scale and Distance Effect																		

Appendix 9: Findings of Color Uses and Color Effects on House D1

TYPE A

TYPE B

TYPE C

TYPE D

TYPE D1

DESIGNER

BY USER

BY ARCHITECT

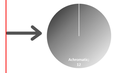
BY CONSTRUCTION FIRM

LIVING ROOM

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#a9e9df
2	Wall 2 (W2)	#a9e9df
3	Wall 3 (W3)	#a9e9df
4	Wall 4 (W4)	#a9e9df
5	Beam 1 (B1)	#a9e9df
6	Beam 2 (B2)	#a9e9df
7	Beam 3 (B3)	#a9e9df
8	Ceiling	#a9e9df
9	Door	#a8dad5
10	Windows	#cdc5bb
11	Floor 1 (F1)	#cdc59b
12	Stair	#cdc59b

AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Living Room Structural Elements

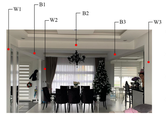
Analysis of the Amount of Color Types on Living Room Plugin Elements

FURNITURES AND FIXTURES

1	Sofa 1 (SO1)	#c2c8e7
2	Sofa 2 (SO2)	#6d6562
3	Sofa 3 (SO3)	#9a9588
4	TV Unit 1 (TU1)	#f8ece5
5	Coffee Table 1 (CT1)	#7a7e72
6	Coffee Table 2 (CT2)	#7e7e72
7	Cabinet (C)	#7a7e72
8	Accessories 1(A1)	#b7ac99
9	Accessories 2(A2)	#a6a095
10	Accessories 3(A3)	#3733d6
11	Pillow 1 (P1)	#b7b3a5
12	Pillow 2 (P2)	#b7a7e3
13	Pillow 3 (P3)	#3e3e3e
14	Lighting 1(L1)	#e1e1d0
15	Curtain 1(CU1)	#958880
16	Curtain 2(CU2)	#d6aaa6
17	Carpet 1(CA1)	#dedbc6

DINING ROOM

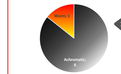
STRUCTURAL ELEMENTS



1	Wall 1 (W1)	#a9e9df
2	Wall 1 (W1)	#a9e9df
3	Wall 1 (W1)	#a9e9df
4	Ceiling	#a9e9df
5	Beam 1 (B1)	#a9e9df
6	Beam 2 (B2)	#a9e9df
7	Beam 3 (B3)	#a9e9df
8	Floor	#e3dbcd

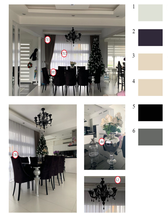
AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Dining Room Structural Elements



Analysis of the Amount of Color Types on Dining Room Plugin Elements

FURNITURES AND FIXTURES



1	Dining Table 1 (DT1)	#dee1d5
2	Chair 1 (CH1)	#2f2939
3	Curtain 1(CU1)	#958880
4	Curtain 2(CU2)	#dbaae8
5	Lighting 2(L2)	#010203
6	Accessories 4(A4)	#666966

KITCHEN

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#dbe9df
2	Wall 2 (W2)	#ebe9df
3	Wall 3 (W3)	#ebe9df
4	Wall 4 (W4)	#ebe9df
5	Beam 1 (B1)	#ebe9df
6	Ceiling	#ebe9df
7	Floor	#e3dbcd
8	Windows	#cdc5bb

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Kitchen Structural Elements

Analysis of the Amount of Color Types on Kitchen Plugin Elements

FURNITURES AND FIXTURES

1	Kitchen Cabinet 1 (KC1)	#f0ede7
2	Kitchen Cabinet 2 (KC2)	#f0ede7
3	Kitchen Cabinet 3 (KC3)	#f0ede7
4	Dining Table 2 (DT2)	#3b3d3c
5	Kitchen Worktop	#3b3d3c
6	Kitchen Ceramic	#3b3d3c
7	Chair 2 (CH2)	#6e6966
8	Chair 3(CH3)	#343332
9	Curtain 3(CU3)	#d5d1ce
10	Accessories 5(A5)	#a09886

GENERAL COLOUR ANALYSIS

Analysis of the Amount of Color Types on Structural Elements

Analysis of the Amount of Color Types on Plugin Elements

Achromatic

Warm

Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (D1)

LIVING ROOM																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Illegible	Legible	Legible	Legible	Legible	Legible			Illegible	Illegible	Illegible				Illegible	Illegible	Illegible
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Narrow											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (D1)

LIVING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Illegible	Legible	Legible	Illegible		Illegible							Illegible					
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (D1)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible			Legible	Legible	Legible			Illegible		Legible	Legible	Legible			Legible		
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (D1)

DINING ROOM																	
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Illegible	Illegible	Illegible	Illegible	Illegible	Illegible			Illegible	Illegible	Illegible					Illegible	Illegible
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Wide											

Table 5: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (D1)

DINING ROOM																	
FURNITURES	FURNITURES																
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect								Legible		Legible								
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (D1)

DINING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible									Legible				Legible				
Scale and Distance Effect																		

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (D1)

KITCHEN																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR	
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3				
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Illegible	Illegible	Illegible	Illegible	Illegible	Illegible			Illegible							Illegible		
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Wide												

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (D1)

KITCHEN																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect									Legible		Legible	Legible		Illegible	Illegible	Illegible	Legible	Legible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (D1)

KITCHEN																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect			Illegible												Legible			
Scale and Distance Effect																		

Appendix 10:Findings of Color Uses and Color Effects on House D2

TYPE A

TYPE B

TYPE C

TYPE D

TYPE D2

DESIGNER

BY USER

BY ARCHITECT

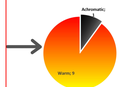
BY CONSTRUCTION FIRM

LIVING ROOM

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#eee1b7
2	Wall 2 (W2)	#eee1b7
3	Wall 3 (W3)	#eee1b7
4	Wall 4 (W4)	#eee1b7
5	Beam 1 (B1)	#eee1b7
6	Beam 2 (B2)	#eee1b7
7	Column 1(CO1)	#eee1b7
8	Ceiling	#ffe7de
9	Floor	#cab9a5
10	Stair	#eee1b7

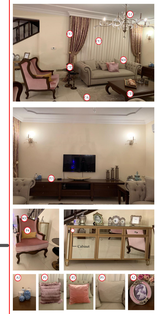
AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Living Room Structural Elements

Analysis of the Amount of Color Types on Living Room Plugin Elements

FURNITURES AND FIXTURES



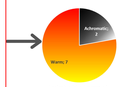
1	Sofa 1 (SO1)	#a19074
2	Sofa 2 (SO2)	#a7a875
3	TV Unit 1 (TU1)	#361607
4	Coffee Table 1 (CT1)	#361607
5	Coffee Table 2 (CT2)	#3d281e
6	Curtain 1(CU1)	#936a66
7	Curtain 2(CU2)	#a9a4b5
8	Pillow 1 (P1)	#c59f9d
9	Pillow 2 (P2)	#c99285
10	Pillow 3 (P3)	#a19074
11	Pillow 4 (P4)	#b6854b
12	Accessories 1(A1)	#535ae5
13	Accessories 2(A2)	#b28584
14	Lighting 1(L1)	#6c79b5
15	Carpet 1(CA1)	#96b363
16	Cabinet	#92653c

DINING ROOM

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#eee1b7
2	Wall 2 (W2)	#eee1b7
3	Wall 3 (W3)	#eee1b7
4	Beam 1 (B1)	#eee1b7
5	Beam 2 (B2)	#eee1b7
6	Beam 3 (B3)	#eee1b7
7	Ceiling	#ffe7de
8	Floor	#cab9a5
9	Door	#dcd6cf

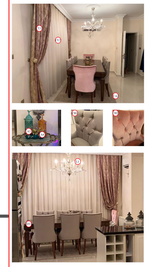
AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Dining Room Structural Elements

Analysis of the Amount of Color Types on Dining Room Plugin Elements

FURNITURES AND FIXTURES



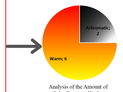
1	Dining Table 1 (CT1)	#361607
2	Chair 1 (CH1)	#a19074
3	Chair 2 (CH2)	#a7a875
4	Curtain 1 (CU1)	#d1cac1
5	Curtain 2 (CU2)	#a9a4b5
6	Accessories 3(A3)	#a9a4b5
7	Accessories 4(A4)	#b9762e
8	Lighting 1(L1)	#6c79b5
9	Carpet 2(CA2)	#968363

KITCHEN

STRUCTURAL ELEMENTS

1	Wall 1 (W1)	#eee1b7
2	Wall 2 (W2)	#eee1b7
3	Wall 3 (W3)	#eee1b7
4	Wall 4 (W4)	#eee1b7
5	Beam 1 (B1)	#eee1b7
6	Floor	#cab9a5
7	Ceiling	#ffe7de
8	Windows	#dcd3e6

AMOUNT OF COLOUR TYPES



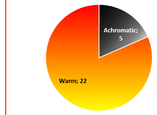
Analysis of the Amount of Color Types on Kitchen Structural Elements

Analysis of the Amount of Color Types on Kitchen Plugin Elements

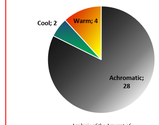
FURNITURES AND FIXTURES

1	Kitchen Cabinet 1 (KC1)	#e7dcd1
2	Kitchen Ceramic	#99897c
3	Kitchen Worktop	#262216
4	Dining Table 2 (DT2)	#262216
5	Chair 3 (CH3)	#ac7d75
6	Curtain 2 (CU2)	#e4cbb5
7	Curtain 3 (CU3)	#decfb5
8	Accessories 5(A5)	#677c8a
9	Carpet 3(CA3)	#a378b1

GENERAL COLOUR ANALYSIS



Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (D2)

LIVING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Illegible			Illegible	Illegible					Illegible	Illegible	
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Wide											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (D2)

LIVING ROOM																		
FURNİTURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible		Legible	Legible	Legible							Legible					
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (D2)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible		Legible	Legible	Illegible	Legible		Illegible		Legible	Legible				Illegible		
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (D2)

DINING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible		Illegible			Illegible	Illegible						Illegible	Legible
Scale and Distance Effect	High	Wide	Wide	Wide		Wide											

Table 5: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (D2)

DINING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect								Legible	Legible	Legible								
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (D2)

DINING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect	Legible	Legible								Illegible			Legible	Legible			Illegible	
Legibility Effect																		
Scale and Distance Effect																		

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (D2)

KITCHEN																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Illegible			Illegible							Illegible	
Scale and Distance Effect	High	Wide	Wide	Wide	Wide	Wide											

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (D2)

KITCHEN																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect									Legible			Legible		Illegible			Legible	Illegible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (D2)

KITCHEN																			
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect		Illegible	Illegible												Legible			Legible
Scale and Distance Effect																		

Appendix 11:Findings of Color Uses and Color Effects on House D3

TYPE A

TYPE B

TYPE C

TYPE D

TYPE D3

DESIGNER

BY USER

BY ARCHITECT

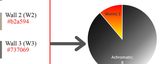
BY CONSTRUCTION FIRM

LIVING ROOM

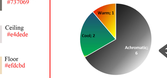
STRUCTURAL ELEMENTS

1 Wall 1 (W1) #737069
2 Wall 2 (W2) #b2a594
3 Wall 3 (W3) #737069
4 Wall 4 (W4) #737069
5 Beam 1 (B1) #737069
6 Beam 2 (B2) #737069
7 Ceiling #e4dede
8 Floor #efdcbd
9 Stair #737069

AMOUNT OF COLOUR TYPES

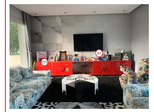


Analysis of the Amount of Color Types on Living Room Structural Elements



Analysis of the Amount of Color Types on Living Room Plugin Elements

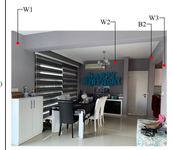
FURNITURES AND FIXTURES



1 TV Unit (TU1) #ff2a22
2 Sofa 1 (SO1) #5aa8d2
3 Sofa 2 (SO2) #6b9090 #6b9432 #795b3d
4 Curtain 1 (CU1) #564f47
5 Curtain 2 (CU2) #dcd7c2
6 Carpet 1(CA1) #0b0d0a #373936 #7b7c76
7 Carpet 2(CA2) #271a15
8 Coffee Table (CT1) #1f1c1d #eeeee6
9 Accensories 1(A1) #e5dbcb

DINING ROOM

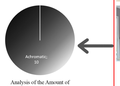
STRUCTURAL ELEMENTS



1 Wall 1 (W1) #737069
2 Wall 2 (W2) #737069
3 Wall 3 (W3) #737069
4 Beam 1 (B1) #737069
5 Beam 2 (B2) #737069
6 Ceiling #e4dede
7 Floor #efdcbd
8 Windows #edeee6
9 Door #dedbd1

AMOUNT OF COLOUR TYPES

Analysis of the Amount of Color Types on Dining Room Structural Elements



Analysis of the Amount of Color Types on Dining Room Plugin Elements

FURNITURES AND FIXTURES

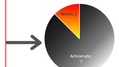
1 Dining Table 1 (CT1) #d3d2c8
2 Chair 1 (CH1) #bebebb
3 Chair 2 (CH2) #060708
4 Curtain 1 (CU1) #3f3134
5 TV Unit 2 (TU2) #050505 #020605
6 Cabinet #c8ceca
7 Accensories 2(A2) #a1a6a3
8 Accensories 3(A3) #6d6d7f
9 Accensories 4(A4) #707f6a
10 Lighting 1 (L1) #bdbdbe

KITCHEN

STRUCTURAL ELEMENTS

1 Wall 1 (W1) #737069
2 Wall 2 (W2) #737069
3 Wall 3 (W3) #737069
4 Wall 4 (W4) #737069
5 Beam 1 (B1) #737069
6 Ceiling #e4dede
7 Floor #efdcbd
8 Windows #edeee6

AMOUNT OF COLOUR TYPES



Analysis of the Amount of Color Types on Kitchen Structural Elements

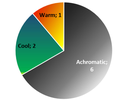
Analysis of the Amount of Color Types on Kitchen Plugin Elements

FURNITURES AND FIXTURES

1 Kitchen Cabinet 1 (KC1) #a41c09
2 Kitchen Ceramic #6b5d66
3 Kitchen Worktop #282824
4 Dining Table 2 (DT2) #282824
5 Chair 3 (CH3) #82a5c9
6 Chair 3 (CU3) #643c55

GENERAL COLOUR ANALYSIS

Analysis of the Amount of Color Types on Structural Elements



Analysis of the Amount of Color Types on Plugin Elements

Achromatic Warm Cool Analogous Direct Complementary

Table 1: The Effects of Colours Used in Living Room Structural Elements on the Perception of Space (D3)

LIVING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible	Illegible					Illegible		
Scale and Distance Effect	High	Near Narrow	Far	Near Narrow	Near Narrow	Wide											

Table 2: The Effects of Colours Used in Living Room Fixtures Elements on the Perception of Space (D3)

LIVING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN WORKTOP	KITCHEN CERAMIC
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3		
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible		Legible		Legible												
Scale and Distance Effect																		

Table 3: The Effects of Colours Used in Living Room Other Fixtures Elements on the Perception of Space (D3)

LIVING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible	Legible									Legible					Legible	Legible	
Scale and Distance Effect																		

Table 4: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (D3)

DINING ROOM																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible		Legible			Illegible	Illegible						Legible	Legible
Scale and Distance Effect	High	Near Narrow	Near Narrow	Near Narrow		Wide											

Table 5: The Effects of Colours Used in Dining Room Structural Elements on the Perception of Space (D3)

DINING ROOM																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN	KITCHEN
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3	WORKTOP	CERAMIC
Sign Effect																		
Camouflage Effect																		
Legibility Effect							Legible	Legible		Legible	Legible		Legible					
Scale and Distance Effect																		

Table 6: The Effects of Colours Used in Dining Room Other Fixtures Elements on the Perception of Space (D3)

DINING ROOM																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect	Legible								Legible			Legible	Legible	Legible				
Scale and Distance Effect																		

Table 7: The Effects of Colours Used in Kitchen Structural Elements on the Perception of Space (D3)

KITCHEN																		
Structural Elements	CEILING	WALLS				FLOOR			BEAM			COLUMN			STAIR	WINDOWS	DOOR
		W1	W2	W3	W4	F1	F2	F3	B1	B2	B3	CO1	CO2	CO3			
Sign Effect																	
Camouflage Effect																	
Legibility Effect	Legible	Legible	Legible	Legible	Legible	Legible			Illegible							Legible	
Scale and Distance Effect	High	Near Narrow	Near Narrow	Near Narrow	Near Narrow	Wide											

Table 8: The Effects of Colours Used in Kitchen Fixtures Elements on the Perception of Space (D3)

KITCHEN																		
FURNITURES	FURNITURES																	
	SOFA			COFFE TABLE		TV UNIT		DINING TABLE		CHAIR			CABINET	KITCHEN CABINET			KITCHEN	KITCHEN
	SO1	SO2	SO3	CT 1	CT 2	TU 1	TU 2	DT1	DT2	CH1	CH2	CH3		KC 1	KC 2	KC 3	WORKTOP	CERAMIC
Sign Effect																		
Camouflage Effect																		
Legibility Effect									Legible			Legible		Legible			Legible	Legible
Scale and Distance Effect																		

Table 9: The Effects of Colours Used in Kitchen Other Fixtures Elements on the Perception of Space (D3)

KITCHEN																		
Fixtures	CURTAINS			PILLOWS					LIGHTINGS		ACCESSORIES					CARPETS		
	CU1	CU2	CU3	P1	P2	P3	P4	P5	L1	L2	A1	A2	A3	A4	A5	CA1	CA2	CA3
Sign Effect																		
Camouflage Effect																		
Legibility Effect			Legible															
Scale and Distance Effect																		