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ORGANIC ARCHITECTURE AND AESTHETICAL EMULATION: AKCAABAT ORTA STREET

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Introduction

Humans, since the ancient times, have been in search of spaces to meet their various needs. The basis for these searches is to give room for human activities. In the organization old the space such factors as various needs and expectations of humans play important roles. Elements determining this organization may be physical findings, cultural facts, or living habits (1). The necessity of architecture in our lives is an undeniable fact. They have always been overlapped. Human being since the ancient times started their lives in a natural atmosphere and since then they continue to exist by building shelters or artificial spaces in this natural atmosphere. Caves, once the natural atmosphere, became the first closed spaces for the humans, and in time those nomadic people created for themselves artificial spaces. Later on when they became agricultural society and were settled, they began to build houses which were made from durable materials, and this tendency continued until today with the effect of industrialization. For this reason, the relation of nature and human created the architecture and nature relation as well.

The design in harmony with the nature is expressed in terms of organic architecture. The close relation between organic architecture and the nature, consistency with the natural environment, the use of local materials, and the philosophy of "time, space and human suitability" are taken as a basis (2). Harmony with nature and resemblance can be expresses in terms of analogy. The concept of analogy involves the nature. As the analogy sources, formations present in the nature and other design element forms are used. Here, how the problem is solved in nature and in other design areas is sought and then a analogy is made between these solutions. This art of analogy is expressed in various terms, and can be places among such direct formal analogy classifications as biological, mechanistic, gastronomic, and linguistics (2). Among the analogies that are

based on a formalistic truth or process, biological analogy has been studied within the framework of this study.

Biological analogy is used in the same meaning with the concept of organic analogy. The definition of the concept of organic goes back, though it was first introduced into architecture by amateur biologist Samuel Taylor Coleridge. Thus, the effects of these different natural and social changes in the cities and architecture have been seen even by the architects of today (3, 4). It is a fact that aesthetical concerns were also there as well as these analogies in these formations and designs. For this reason, whether organic analogy has aesthetical concerns or not is an important topic.

Aesthetical search in organic architecture is perceived as natural harmony. Architecture that has topographic harmony in the nature is in search of aesthetical value as a complementary element. Organic architecture with its function, harmony, material and aesthetics makes up a whole.

The sample of Orta Street, Trabzon-Akçaabat is one of the oldest residential areas that has arrived today with its topographic harmony, aesthetical value, simplicity and naturalness. This residential area under study will be studied in terms of aesthetics with its old and new buildings. Before the study, aesthetics, analogy, and organic architecture elements will be dealt with theoretically.

Aesthetics and Analogy

Urban spaces that are identified with the buildings but in fact occupies the remaining parts creates a certain form with their occupancy and cavity rates, facades of the other buildings, and hard and soft ground (5). In the cities such places as streets and avenues may be named as urban spaces. These cities develop and change like living organisms in time based on the changing life styles. In the formation of these spaces, aesthetical concerns as well as functionalities become important. The spaces formed by these opinions are perceived as a whole when they are in harmony with the nature.

Aristoteles' words "an artist can depict something as it is or as it should be and, an artistic work will be good to the degree that however good the nature is completed in the same way as the nature does", his view of art, and his idea of "a beauty must be proportional" are closely related to the concept of aesthetics in terms of balance and aesthetics that was formed by these artificial spaces. The texture that was created by the facades and organizations make up the aesthetic formation of the urban spaces (6).

Through the Kant's definition of art "the beauty of the art is something that has no interest, free from conceptuality, no specified purpose, inevitably well", there is a way to reach the aesthetics. As a result, there is a need for aesthetical perceptibility in something that is liked, and that evokes good feelings (7). Aesthetics is called as a branch of philopsopy that deals with the concept of beauty, and the feeling it evokes in human mind and feelings (8). Aesthetics and the beauty are the inseperable concepts. They become unitedas the two halves of a whole.

The basic subject of the science of beauty has been art and works of art. In this context, aesthetics can be called as the philopspy of the fine arts (7). Every architectural work is

designed as a piece of art. Thus, they can not be evaluated without considering the aesthetical values they have. The element of "aesthetics" that involves human'desire to make everything around look better has an important role in the formation and evaluation of the architectural product. Full satisfaction in terms of aesthetics makes up the core of the architectural products (9). While architectural product is designed, objects or architectural approaches in the nature may be a source of inspiration. This inspiration may give room to the resemblance. Inspiration can also be expressed as "emulation" or "analogy" (9).

The dictionary meaning of analogy is expressed as "similar basic features but to similarity between the similar objects" (10). Similarity, emulation, or analogy occurs with inspiration. From the old times until today, humans imitated nature. The buildings we are living in now were inspired from the caves and arrived today. Ancient people first found somewhere to inhabit and then built similar places to live in. For example, they used a log to sit on, and then they designed a stool. Through observing, using and imitating, the world in today's sense came into being. Emulation, association of the living spaces with the nature gave way to the birth of the concept of analogy.
The concept of analogy was dealt within different limitations. One of these is the one done by Peter Collins. In his book of "Changing Ideals in Modern Architecture" Collins divided analogy in architecture into four groups (11):
1. Biologic Analogy
2. Mechanic Analogy
3. Gastronomic Analogy
4. Linguistic analogy

Within the scope of the study, Akçaabat-Orta Street settlement will be investigated in terms of "Biologic analogy" and evaluated in terms of "aesthetics". Judging by the theory that biological objects are integrated to the living and non-living objects of their close environment and thus carry out their evolution, it is claimed that there is a need for a strong relation between the building and its environment. (12). Urban spaces that are to be treated as biologic objects make up the whole by integrating each parts in best way with the concepts of function and aesthetics. Thus, buildings become integrated with their bodies and with other buildings.

Biologic Analogy and Organic Architecture

Biologic Analogy can also be expressed as Organic Architecture. The idea of "organic" goes a long way back in history. In the Linneaus' book of "Species Plantarum", the classification of vegetables based on female prodection organs is thought to be the first organic classification of the mankind. Horatio Greenough, a sculptor from America, directed his attention to the anology expressions between the nature and the architecture in the same years. In his research called "Physiological Researches on Life and Death" Xavier Bichat used for the first time the expression "organic" while talking about the symmetry of the animal skeletons. An Ametour biologist Samuel Taylor Coleridge pioneered the application of the concept of organic in art and architecture. He described that organic from as "natural, not yielding to the outside pressures, developing and forming, and ecoming perfect when its development is finalized." (2)

Organic architecture reflects the space, nature, living and non-living objects and at the same time integrates into the human. For this reason it can be called as living organism. Like other living objects it carries an architectural element that changes forms, develops in time to meet the needs of humans.

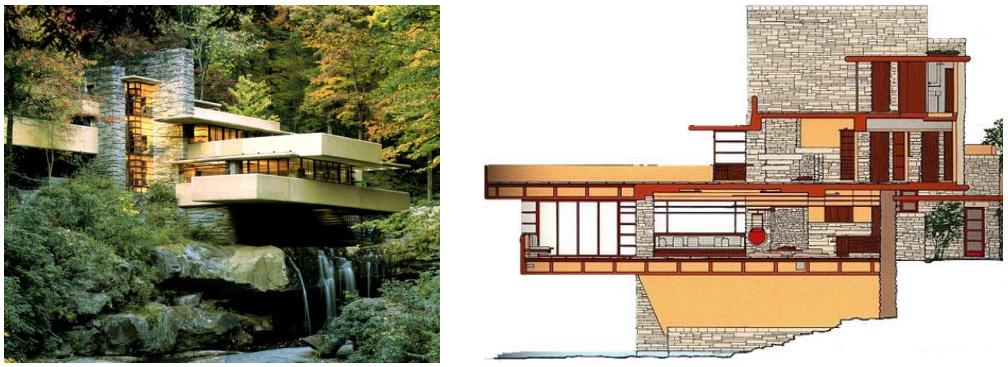


Figure 1: *F. L. Wright*, Falling Water House

Louis Sullivan, one of the pioneers of the organic architecture, claim that "form follows functions" but her student F. L. Wright claimes that "Form and function are the same, and they grow in the same way", which became the most important principle of the architecture (Figure 1) (13). In the formation of organic chemistry function and form are designed together. The product adapted itself to the nature with its function, form and easthetic perception. This adaptation is in line with the city's natural topography, the structures, and the textural consistency of these structures. These structures are like a module placed on the land. Topography determimes the module to be used such as square, rectangular, or equilateral paralleogram, triangle, octanegon, hegsagone, circle, or circular section, or the module can be used based on the other properties of the land (14).

Abel also classified analogy and referred to the "organic models" in analogy. In the traditional architecture that will be inspired from these organic models it seems that there is a harmony with the life styles (4). This harmony takes place in an organic relation with the today's structures and topography. The resulting formation is in such a way as to meet topographic and environmental conditions. The architectural products that come out in this way organize the development of the design. The concept of aesthetics is reflected to the urban space based on the structure in the organization through the geometric forms, textures and transportation axles (15).

Aesthetics in Organic Architecture

City is defined as place that is located on land that is left from the structures, that is used by the city dwellers, in which urban activities take place (16, 17). Urban spaces are the areas on which structures are formed. These urban spaces are formed by the design and organization of the architectural structures. These modules placed in the urban spaces form the topography and give an aesthetical dimension to the land. For this reason, in the formation of architectural structures that are called as module, such concepts as form, function, and beauty are combined and thus an aesthetical design is created. The aesthetic design approach affects the topography by combining with modules. The

material of each module on the topography gives an aesthetical value to the space and is reflected to the nature by means of the selected natural colors, materials and textures (15).

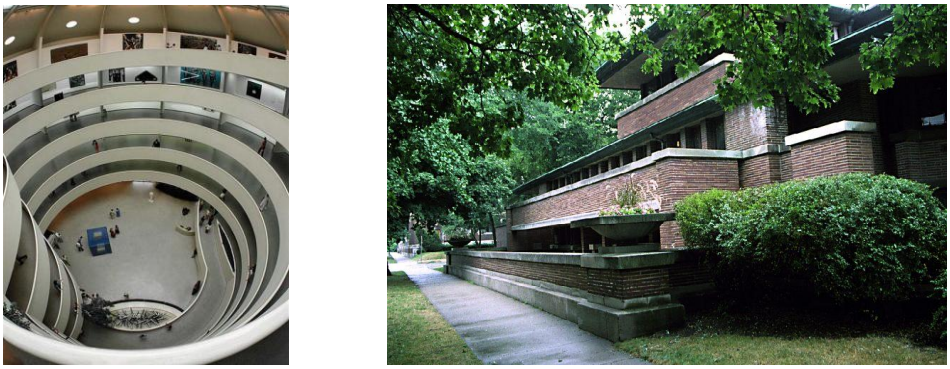


Figure 2: *F. L. Wright*, Guggenheim Museum and Robie House

The aesthetical dimension of the organic architecture in the urban context can be deal with urban spaces and architectural structures. Organic architecture creation principles stated by Wright in 1908 can be expressed as : "Simplicity, organic structural design, the use of suitable colors and forms with the environment, the display of material character with no change, the typical character of the structure free form other styles or fashion" (Figure 2) (2). When all these principles are formed the resulting work proves its aesthetical value with its perfect harmony and beauty. The work makes up a whole in all aspects.

When seen from the design point of view, organic architecture that makes itself felt with its perfect harmony with the topography is perceived as aesthetics with its structure, geometric construct, transportation axe, and the texture created by its materials. Aesthetic criteria can be determined by the vertical and horizontal components on the topography.

The vertical components are composed of topographic structure, structural form, and the city dwellers. Topographic structure that was formed by the natural elements is a factor that affects the development of the city. As well as topographic elements, users are the other factor that make-up the horizontal components (6). The formation of urban spaces is treated with the vertical components. Vertical components form walking areas, structures and elevated buildings. The relation between the stuructures and the other areas that enable pedestrian flow and their interaction in the third dimension affect the aesthetical value. Vertical component criteria are determined by the analysis of the façade elements, the perception of pedestrian and vehicle speed, socialization, and continuous - discontinuous soft - hard places (6).

The vertical and horizontal components are in continuous relation. To a certain extent, they form the general structure of the urban spaces on the topography, and thus they change into the perception in this system. Within the framework of this study, with the new and the old settlements of Akçaabat Orta Street, the aesthetical dimension of the organic emulation will be dealt.

Study Site:
Akçaabat Orta Street

The first studies about the foundation of the Akçaabat focused on between the western investigators who claimed that the locals of the place were originally from Agean and eastern investigators who claimed that they were from Asian. The documents that will shed light on the short history, family photos, antiques..etc were all disappeared after the Russion occupation of the area. Though the ruins of Roman, Bizantum, Komnenos, and Ottoman feell the victim of the time, the history of Akçaabat shows how rich it was at the time (18). Orta Street is the historical symbol of Akçaabat.

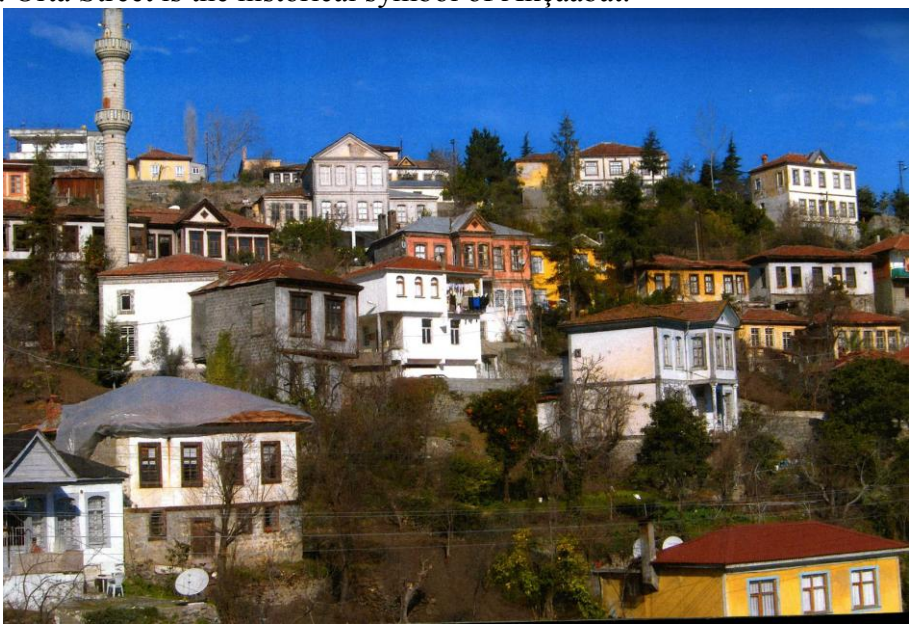


Figure 3. Aview from Akçaabat Orta Street

Orta Street, one of the typical examples of the 19.century Ottoman Architecture is one of the rare places that reached to our modern day with its civil architecture eamples, streets, stairs, walls, fountains, trees, and other elements (Figure 3). The historical texture's integrity is completed on street scale. St. Michael Church and The chapel, and church, today used as a primary school within the protected area, are some of the important works. (18).

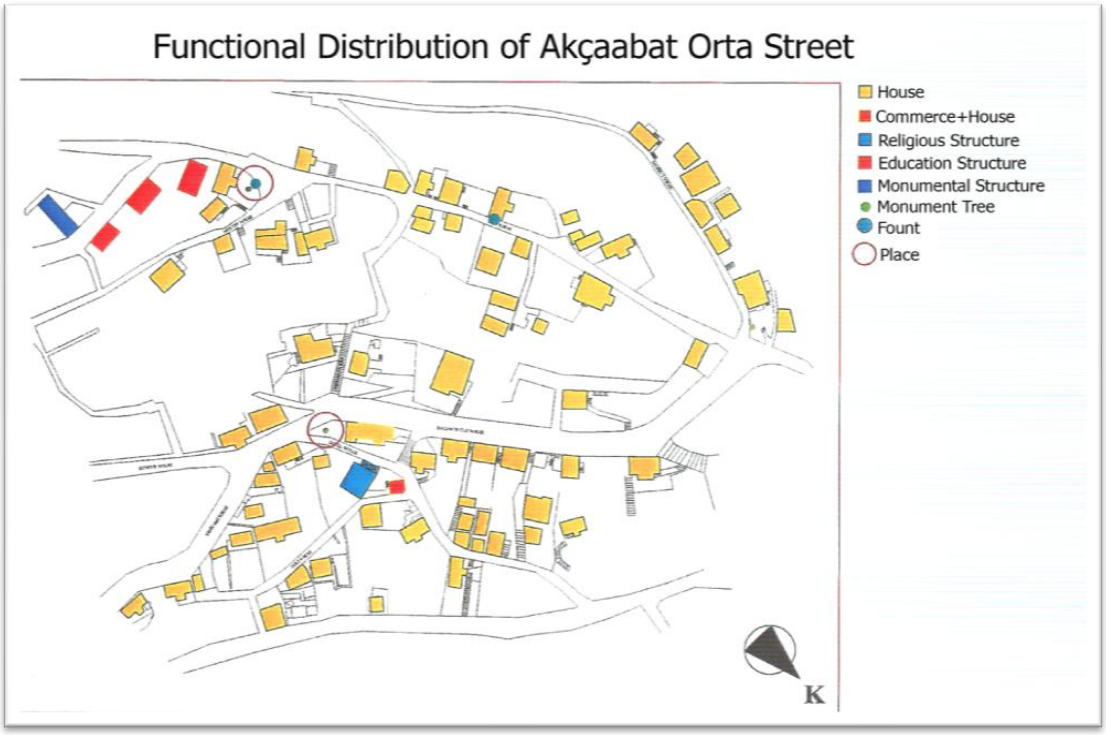


Figure 4: Functional distribution of Akçaabat Orta Street

Akçaabat Orta Street has arrived today as one of the best examples of Organic architecture with its location, nature, building height, aesthetical appearance, and simplicity (Şekil 5). The most part of the Orta Street were declared to be taken under urban protection site in 08.24.1988 (18).

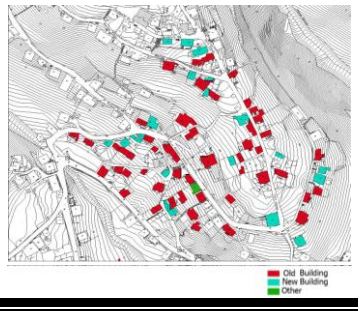
Figure 5: An avenue from Akçaabat Orta Street.

It is observed that concrete buildings distort the texture of the old settlements in today's Orta Street. In this study, how the old settlement and the new ones together affect the organic architecture in terms of aesthetics will be investigated.

The Aesthetical Discussion of Akçaabat Orta Street in terms of Organic Architecture

The aesthetical dimension of the Organic architecture will be investigated in Akçaabat Orta Street (Table 1). The structural concepts of the old and the new settlements in similar locations but different structures were dealt with under the titles of topographic structure in terms of asthetics, transportaion axes, and materials.

Table 1: Urban structure of Akçaabat Orta Street

Urban structure of Akçaabat Orta Street	Topographic Structure	Settlement Construction
	● Slope Organic System 	● Buildings' location: Slope Site ● Site Settlement form: Detached 
		

Under title of topographic structure vertical and horizontal components were determined. In the vertical components, land slope, and location were the determinant factors. In the organizations of the old and new structures of the street, the locations of the structure to each other and their layout were dealt. In Orta Street where there is old and new settlement, it ws seen that similar settlements were chosen in terms of topography. But the structure quality of the new developments is not good and this changes the aesthetical perception though the form is the same. Under the title of vertical components; the height of the structures in the new and old settlements were taken (Table 2).

Under the title of transportation axes, in horizontal components, in old settlements, some forms were determined, which are used as pedestrian roads and which make up the texture of the street. In the new settlements, some roads that were expanded form the narrow ones were determined. These roads connect the place to the Akçaabat. Under the title of vertical components, stairs in the old settlement were dealt with. In the new settlements, those stairs were only used in the entry of some house units. But, main stairs that were determined for organic texture were taken as criteria for the paintings (Table 3).

Table 2: Topographic Structure

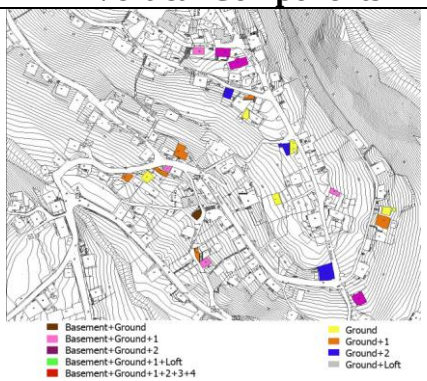
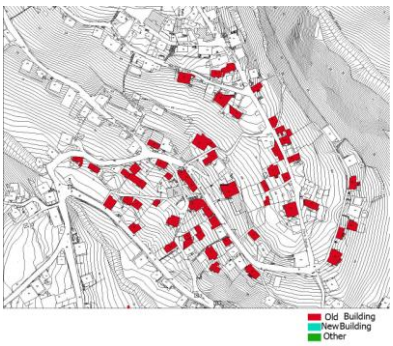
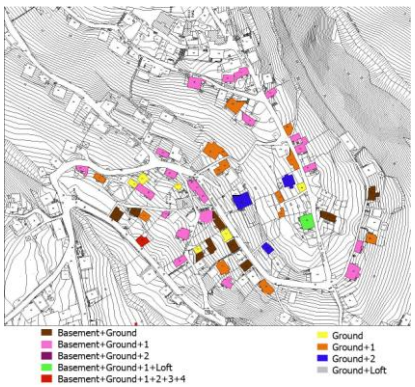
		Topographic Structure	
		Horizontal Components	**Vertical Components**
New Settlements (Structure+Site)	**Structural Concept**	 Topography, mostly slope parallel structures were constructed.	
	Figure		
Old Settlements	**Structural Concept**	 Topography, mostly slope parallel structures were constructed.	

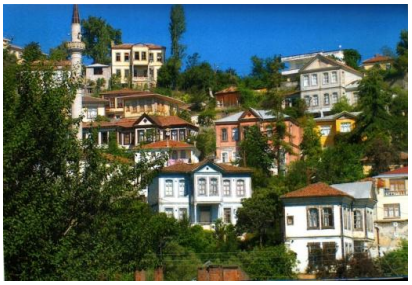
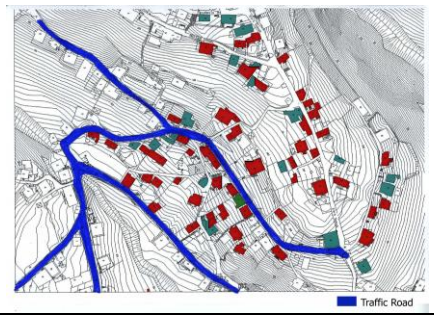
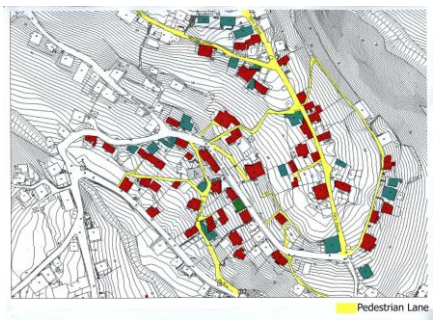
	Figure		

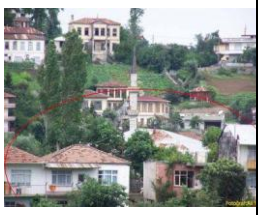
Table 3: Transportatin Axe

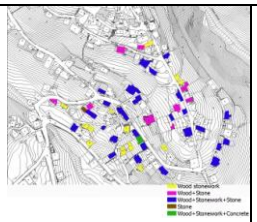
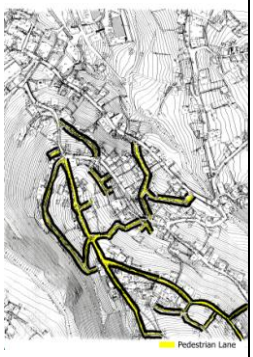
	Transportation Axe		
New Settlements (Structure+Site)	**Structural Concept**	**Horizontal Components**	**Vertical Components**
			● Found in few house entries- in street
	Figure		
Old Settlements	**Structural Concept**	 ● Organic /narrow roads	 ● Organic texture

	Figure		

The textures formed together with the materials were investigated in terms of structure and settlement properties on the part of vertical components. Based on these determinations, the materials of the stairs in the old settlement were determined. In the new settlements, a stair texture does not exist in the street texture. For this reason, the stairs which were built for the entries of the few buildings were ignored (Table 4).

Table 4: Textures composed of materials

		Textures composed of materials			
New Settlements (Structure+Site)		**Horizontal Components**		**Vertical Components**	
		Structure	**Transportatin Axe**	**Structure**	**Transportatin Axe**
	Structural Concept	 ● Concrete ● Stonework		● Concrete ● Tile-Plaster ● Brick	● Found in few house entries- in street
	Figu re				

Old Settlements (Structure+Site)					
	Structural Concept	 ● Wood Stonework ● Stone●Wood+Stone ●Wood+Stonework+ Stone● Ahşap+Kagir + Betonarme		● Wood ● Stone ● Wood+Stone ● Wood+ Concrete	
	Figure				

Conclusions

The concepts of space and place are combined into one in traditional societies and are the indicators of societal relations. The most important part of the traditional culture is that it was placed on a basis of sun, nature, and human triangle. These values are the basic facts of life and they are constructed on time, space and place contexts (19). As a result of these, such contexts as time, space and place will be integrated into the triangle of nature, human and sun turns into a inference. This will cause emulation in the design process. Emulation can show itself in the construction of living values. In this context, organic anology in which the effect of the concept of place is felt on time and space may be referred. It is possible to investigate their relations, discourse and interaction through aesthetical studies. It can be said that in the study area the design in terms of architecture and space may be different from the point of aesthetics. In the aesthetical evaluation of the old and new structures in Orta street, such things as topography, structural concept, textures, and the transportation axes were thought to be effective and they were measured according to the these criteria, the results of which are as follows. The elements given above were dealth with in terms of vertical and horizontal components. In terms of the components that were form by topography;

- Old settlements were constructed organically as horizontal components suitable to the topography; the structures were mostly located in parallel and towards the secenery. The structures are used for as houses. The heights of the structures are generally basement + floor, floor+1, and basement + floor+1, For this reason, it suited to the topography as a vertical component. Thus the relation of the structures to eachother

and to the other people has a humanistic function. This paves the way for aesthetical coherence.

- New settlements were places to the slope topograpgy haphazardly. It was seen that the design target of the new structures was to increase the number of the floors by making use of the slope land and to build nomadic houses that was partly resulted from the economic conditions rather than a good view or suitability to the nature. All this negatively affected to the present organic emulation. The heights of the buildings were mostly basement + floor+2, floor+1, floor, floor+2, basement + floor+1, and basement + floor+4. According to these vertical components, it was found that these nomadic structures were in majority and there were also tall structures.

In terms of components formed by texture materials

- The old settlements were formed according to the previous structure of the street, bay windows were sometimes used, and they were also warm and flexible. They were made by such systems as wooden stonework, stone, wooden + stone and wooden + stonework + stone. Their facades were mostly wooden, stone, and wooden + stone.
  Transportation axes are the other elements by which the textures of the materials were felt. Here, since old structures were constructed in an organic system they have a soft ground structure. The materials used were stone and soil. Vertical transportation axe were used in many points. They were used in pedestrian road among the streets and also in building fronts. The material was stone texture. Vertical and horizontal components that form the road axes were suited to the topography in aesthetical terms. For this reason, street is perceived like a single unity. And this feels organic emulation with a natural aesthetics.
- New settlements were constructed in concrete or in stonework. Facades are made either by brick or tile. The materials are not suitable to the nature and this can be seen in the aesthetical structure of the street. In the present texture there is neither harmony nor contrast. This made the perception diffucult and led to confusion in perception.
  Transportation axles have been examined again to be able to meet our current needs. Having been widened, some roads have been opened to vehicle traffic. Vertical circulation axles aren't spread throughout district as in the present form. They have been designed for building entrances only at some places. That the widened roads at transportation axles are present ones doesn't harm the harmony, which is not suitable for natural structure of district aesthetically due to the materials used. Vertical circulation axles aren't of aesthetical feature because they are only for structure.

In point of components of transportation axles,

- In old settlings, transportation axles heve been designed according to topography and the sizes of axles have been measured related to the technology of that period of time, so they are not convenient for today's vehicles. Roads are now used for pedestrians. Orta Street is of vertical circulation axle due to the structure of the area. This system has been integrated with the district. The structural features of transportation axle are of humane ones, which provide the continuation of the natural aesthetic along with the structures.
- In new settlings, although transportation system does not destroy the harmony with the old because of the use of the present structural axles, present-day measures determined do harm the structure of the district. New vertical transportation axles are not for all users in the district as in the current structure. These stairs have been

designed for the building entrances, so they are not located throughout the district, which is not aesthetical.

- In Orta Street, old buildings are still used as dwellings, but some changes have been observed in terms of today's needs. Some dwellings have been repaired by the users and the others have been worn out due to not being used. New buildings are either shanty house or apartments, which demolishs the harmony with the peculiar to the nature. The traditional buildings have continued to survive aesthetically with help of maintainance measures taken recently.

References

1. Usta, G., "Anadolu Osmanlı Mimarisinde Mekan Analizi: Han ve Kervansaray Yapılarında Uygulama", Doctoral Tesis, KTU Graduate School of Naturel&Applied Sciences, January 1994.
2. Ayyıldız, S., Özbayraktar, M., "Organik Mimarlık ve Doğaya Öykünme Serüveni" Tasarım Publication Group, Tasarım 148, 2005/02.
3. Gür, Ş.Ö., "UIA'96 Üzerine Öznel Bir Yorum", Yapı 178, 9, 79-96.
4. Ayyıldız, S., "Mimarlıkta Analojiler Üzerine Estetik Ağırlıklı Bir İnceleme", Doctoral Tesis, KTU Graduate School of Naturel&Applied Sciences, July 2001.
5. Bala, H.A., "Bina – Kent, İç – Dış, Özel – Kamusal Arasında Kentsel Arayüzler", Yapı 293, 2006/04.
6. Ertaş, Ş., Özdemir, İ., v.d., "Kentsel Estetik/Farklı Kültürler: Kars Örneği", Turkish Congress of Aesthetics, December 2006.
7. Yetkin, S. K., "Estetik Doktrinler", Palme Publishing, Ankara, 2007.
8. Hasol, D., "Ansiklopedik Mimarlık Sözlüğü", 7. Press, Yapı Industry Central, İstanbul, 1998.
9. Şentürer, A., "Mimaride Estetik Olgusu", 1. Pressure, İTÜ Architectural Faculty Press Shop, 1995.
10. Büyük Larousse Sözlük ve Ansiklopedisi, Interpress Press and Publication A.Ş., 17. Volume, Librairie Larousse, 9051s, 1986.
11. Collins, P., "Changing Ideals in Modern Architecture 1750-1950", Faber and Faber Limited, London, 1965.
12. "Mimaride Analojiler", http://analogy.itgo.com/abel.htm., Abel'in Analogy Models 05.31. 2007.
13. Hepgüler, M., "Metin Hepgüler ile Organik Mimarlık Üzerine" Tasarım Publication Group, Tasarım 148, 2005/02.
14. Storrer, W.A., "Organik Mimariye Bakışım" Tasarım Publication Group, Tasarım 148, 2005/02.
15. Wythe, J.H., "Organik Mimarinin Gerekliliği" Tasarım Publication Group, Tasarım 148, 2005/02.
16. Bakan, K., Konuk, G., "Türkiye'de Kentsel Dış Mekanların Planlanması", YAE – Tübitak, Ankara, 1987.

17. Aydemir, Ş., Aydemir, S., "Kentsel Alanların Planlanması ve Tasarımı", İber Typograpy, 2000.
18. Uzunali, N., "Akçaabat Orta Mahalle", Akçaabat Township Publication, Trabzon, 2005.
19. Üstün, B., "Konut Mekan Kurgularının Yeniden Sorgulanması: Gelecek İçin Konut Tasarım Yaklaşımları", XIX. International Building and Life Congress, March 22-24 2007, Bursa, Volume 1, 263-275.