



## SENSUAL DESIGN PROCESS IN OUTDOOR SPACE

Tuğba DÜZENLİ\*

\* Assoc. Prof. Dr. Department Of Landscape Architecture, Faculty Of Forestry, Karadeniz Technical University, [tugbaduzenli@gmail.com](mailto:tugbaduzenli@gmail.com)

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### ABSTRACT

The aim of this study is to prioritize the sensual design in the outdoor space design process in the education of landscape architecture. The outdoor space-environment design process is a part of the sensual design process in the education of landscape architecture. In this study, it is aimed to examine the process in an environment specific to studio work. The studies of three students, completed in the course of Environmental Design Project 6 with respect to design of Ahmets Restaurant Environmental Project, were examined in detail in terms of sensual design. As a result, creative designs that offer a variety of activities aiming to feel and experience the open spaces of Ahmets restaurant on the coast and its surroundings, which are designed with sensory design, have been obtained. As a result, creative designs have been achieved which offer a variety of activities aiming to feel and experience outdoor spaces with the senses through the coast and surroundings of Ahmets restaurant, designed by means of sensual design.

**Keywords:** Outdoor Space, Landscape Architecture, Sensual Design, Education

## AÇIK MEKÂNLARDA DUYUSAL TASARIM SÜRECİ

### ÖZET

Bu çalışmada amaç peyzaj mimarlığı eğitiminde açık mekân tasarım sürecinde duysal tasarımın ön planda tutulmasıdır. Peyzaj mimarlığı eğitiminde açık mekân-çevre tasarım süreci duysal tasarım sürecinin bir parçasıdır. Bu çalışmada da bir stüdyo çalışması özelinde sürecin incelenmesi amaçlanmıştır. Çevre Tasarım Proje 6 Dersi kapsamında tamamlanan Ahmets Restaurant Çevre Proje tasarımına ait üç öğrenci çalışması detaylıca duysal tasarım açısından incelenmiştir. Sonuç olarak; duysal tasarım ile tasarlanan Ahmets restaurant kıyı ve çevresi açık mekânların duysal hissedilmesi ve deneyimlenmesini amaçlayan birçok etkinlik çeşitliliği sunan yaratıcı tasarımlar elde edilmiştir.

**Anahtar Kelimeler:** Açık Mekân, Peyzaj Mimarlığı, Duyusal Tasarım, Eğitim

### 1. INTRODUCTION

Spatial experiences are multi-sensual experiences. The eye, ear, skin, nose, tongue, skeleton, and muscle are each effective in measuring space (Erkan Yazıcı and Alp, 2017). The space contains many areas of sensual experience that interact with each other rather than the usual five senses. The senses may exhibit different perceptions based on the culture, time, and space etc. In situations such as excitement, sensual stimuli are directed to more prominent senses from calmer senses. For instance, perceptual differences arise such as from seeing to hearing, touching and smelling, and from light to shadow (Pallasmaa, 2011). Space is directly related to people's perception of the volume they experience with their senses and creating them in their minds. According to Zaredar (2015), the person entering the space acquires an overall



impression showing the dominant spirit of the environment with unconscious perception without controlling the elements separately.

Although mostly visual perception is concerned while mentioning the perception of space, the entire sense organs are affected at different degrees, and the extent of such impact varies based on the space to be perceived and the individual. Perception is the interpretation of sense impressions, and visual perception is the ability of an individual to comprehend what he/ she sees. The things to be seen, how they will be perceived, which images will be perceived, and which will not, the meaning to be attributed to the images that were perceived are associated with one's knowledge and experience (İnceoğlu, 2004). The concepts of form, color, texture, material, and light are among the design elements that affect the visual perception in the space. The perception types such as dimensional, auditory, and thermal, also play an important role in our perception of space except the visual perception (Aslan et al., 2015). Among the perception, bringing the sense of sight into the forefront was criticized by Pallasmaa and he argued that the space should be experienced in the company of all senses. In addition, she rejected the perception based on vision and emphasized the holistic perception that includes all the senses and stated that the sense of sight is the evolved form of the sense of touch. Moreover, he rejected the perception based on vision and emphasized the holistic perception that includes all the senses and stated that the sense of sight is the evolved form of the sense of touch (Pallasmaa, 2011). In the perception of space, two basic concepts are defined as sensual and cognitive perception. The actions of seeing, hearing, smelling, and touching that we can perform with our sense organs constitute sensory perception. In cognitive perception, a series of psychological transformations of the information obtained by the individual spontaneously appears as a phenomenon that is analyzed about encodings, storages, reminiscences, and relative places (Downs, 1973). Pallasmaa (2005) argues that Steiner's philosophy assumes that we use at least twelve senses when perceiving our environment. These are organized as the sense of touch, life, movement, balance, taste, smell, sight, hearing, temperature, speech (language), thinking as well as the sense of self. The senses cannot be separated from each other with certain lines. Each sense contains a different feature of the object to be perceived. Each one is loaded with a meaning that equates it with the qualities of the other senses and is related to the other senses (Onur and Zorlu, 2018). Multi-sensual perception occurs through the interaction of sensory organs, which cannot be a sufficient source of information on their own, and by completing their deficiencies by cooperating with each other (Bachelard, 1969; Marks, 2000).

The sensory process based on our senses is defined as the process of comprehending, feeling and interpreting the stimulating impacts (information and data) coming from the environment through our senses (Aydınlı, 1992). In the knowledge-based mental process, the awareness gained is conceptualized in our minds, transformed into meaningful stimuli, and recorded in memory through the environmental information and stimulating impacts we acquire by means of the mind. As a result of the perception process, awareness is formed with the perceived and experienced acquisitions (Onur and Zorlu, 2018). The space that we perceive, measure and shape with all our senses is not actually space, but a multidimensional concept. Therefore, expressions and visualizations for design, usually used today, have been insufficient in explaining this multidimensional space definition. Maquettes, models, photographs, or drawings describe a space to us. However, this is a space having no sound, smell, texture, taste, temperature, humidity as well as frozen in time and without traces of life. If the space is built like a mosaic in the mind of the individual and the individual becomes familiar with that space, a sense of belonging gradually begins to emerge. The way to interpret the space with its entire aspects is to combine all these layers of sense and emotion (Birir and Kaya, 2019).



Consequently, the act of sensing and the five senses associated with it are of great importance in the interaction process of the person who perceives and experiences the space. Therefore, referring to methods close to real sensations while performing the design phase of the studies on space design within the scope of the design education will further strengthen the perception of space. The aim of this study is to prioritize sensual design in the outdoor space design process during the education of landscape architecture.

## **2. OUTDOOR SPACE DESIGN PROCESS WITHIN THE SCOPE OF THE EDUCATION OF LANDSCAPE ARCHITECTURE**

The cognitive and sensory teaching objectives improve the learning abilities of design students by improving their perception potential as in all fields of education. Therefore, the structure of expressions used in design/landscape architecture education is mostly based on visual perception. These are grouped as three-dimensional objects, with two-dimensional graphics. Advances in computer technology have added new two- and three-dimensional experiences to this pair in electronic environment. According to Goldermans (2001), these experiences are “visualization, which is the task of transforming a spatial object into two- or three-dimensional models by arranging it with symbols, simulations and animations in a way that the human mind can perceive during design, application and after application” (Birir and Kaya, 2019). Landscape architects frequently use the creative sketching technique in the preparation phase of environmental design. At the stage when the idea of design begins to mature, they include analysis and synthesis in their works, embodying and experiencing their ideas. At this stage, they use sketches, orthographic models, axonometric, isometrics, computer presentations, models. At the stage for the final product, more technical drawings are included.

Design studios form the backbone of the design activity by including different training models, training periods and methods in different parts of the world. It defines a student-oriented or educator-oriented creative process in which the educator and the student mutually feed off each other, although there are basic differences. However, such focuses on design studios are important in terms of both the student's and the educator's experience, worldview, design perception and evaluation method, design education, and thus the course of the designed object in all geographies. On the other hand, the process that has become a very common practice in the context of the formation of experience and critical culture in the design studio and that includes the research, analysis, formal and functional discussion and evaluation of space examples with similar characteristics at the beginning of the design process, makes formal analysis possible in the context of design education. During this process, it is sensual intelligence and rational mind that reproduces creative memory by transforming visual and conceptual information. Repeating, changing, duplicating, imitating, grouping, transforming, elaborating, adapting etc., of which the designer is the direct determinant, and the approach to the design problem, determines the selection and types of examples, as well as the differences and similarities that the image has (Demirkan and Usta, 2020). This entire process helps in sensual development.

In brief, during the process while sketches and conceptual graphics are at the top of the visual graphic language's line from abstract to concrete, models and three-dimensional animations etc. are at the end of this process. In summary, in the environmental design process, it is observed that expression techniques such as conceptual graphics, orthographic, dynamic graphics, perspective and three-dimensional representations, computer are included (Porter, 1979; Güner and Yücel, 2005). According to Zumthor, material compatibility, the sound of space, the temperature of space, surrounding objects, being between composure and seduction, tension between interior and exterior, levels of intimacy and the light on things are the basic principles that make up the design product/atmosphere (Zumthor, 2006). In Zumthor's structures, space is



more than the merging and forming planes in the void. The title “Form Follows Everything”, which he used at a symposium a quarter of a century ago, started to reveal the signals that there is much more to the formation of space or the creation of space perception than formation at that time. It strives to create a space that appeals to all sense organs.

The students studying Landscape Architecture are expected to abstract the meaning and contents of the perceived space, and then transform these contents and meanings into two (drawing) or three-dimensional (model and/or photorealistic model created in computer) representation forms suitable for mental and visual changes. Visualization involves both mental and physical processes. The student needs to ensure coordination between mental and physical representations for visualization, and to provide continuous feedback in order to adapt to the changes made in the representations. Orientation is of great significance in the spatial design process so that the design student can perceive and comprehend both the outdoor spaces around and the own product designed with different dimensions and perspectives. In studies conducted with two- and three-dimensional representation tools such as drawings, models, and digital models, different views and situations are obtained by rotating objects within a fixed viewing angle. The perspective drawings, virtual-augmented-mixed reality environments or three-dimensional photorealistic visuals consider the possible orientations of the designer and/or potential users and accordingly different perception possibilities. As a result, the outdoor space-environment design process during the education of landscape architecture is a part of the sensual design process. In this study, it is aimed to examine the process specific to studio work.

### 3. IN PRACTICE

Students' sensual perceptions are strengthened by teaching creative thinking and experiencing the design process in courses such as projects. The creative characteristics of the personality of the student is strengthened by this method and the sensual process serves to reveal the potential of the creative product together with the creative person (Düzenli et al., 2020, Alpak et al., 2017; Düzenli et al., 2017a). The education of landscape architecture is defined as generating options, shaping the land, creating outdoor spaces suitable for human activities (Rodlek and Steiner, 1998; Özkan et al., 2016; Düzenli and Alpak, 2021). Since the discipline of Landscape Architecture is a multifunctional profession that includes concepts for different disciplines, it is necessary to integrate different methods in the education process. Therefore, students are expected to produce original and functional designs suitable for the purpose by integrating the design processes in the education process (Düzenli and Alpak, 2016; Düzenli et al., 2017b; Düzenli et al., 2017c). The resulting designed product emerges because of the creative problem-solving phase, and sensual design is the most important part of the process (Düzenli et al., 2018a; Düzenli et al., 2018b; Düzenli et al., 2021).

The course of Environmental Design 6 taught in the 4th grade of the Department of Landscape Architecture at Karadeniz Technical University was examined in terms of sensual design in the study. In this course, firstly, the project title of "Ahmet's Restaurant and Its Environment Design" was given to the students. First, students were asked to do a literature review on the subject (abstract-character unity, concrete-real design examples), to examine the restaurant and its surroundings, as well as the subject of coastal projects, and to make a list of activities held around a restaurant and on the coast. Then, each student determined a scenario and concept for this coastal restaurant area. Afterwards, in order to develop their creativity skills and sensory perceptions, they selected the activities that were suitable for the concept they determined, and a function chart was put forward for the activities. They made field-oriented analyzes and syntheses to create their original formal approaches in line with the determined activity list, the example and scenario emulated because of the literature review. In line with the determined activity list, the example and scenario emulated because of the literature review, they made



field-oriented analyzes and syntheses to create their original formal approaches. Based on all these, sketches were made, and 3D proposals were created. By choosing one of the suggestions created the size suitable for the capacity, the equipment and form suitable for the activity, in other words, the spatial setup, were developed and the final products were acquired. The studies of three students, completed in the workshop of Assoc. Prof. Dr. Tuğba DÜZENLİ within the scope of the course of Environmental Design Project 6 in 2020-2021 Spring Semester with respect to design of Ahmets Restaurant Environmental Project, were examined in detail in terms of sensual design.

#### 4. STUDY FIELD

From past to present, waterfront areas have been primarily preferred areas when positioning residential areas due to the advantages created by defense, commercial and climatic flood conditions. The coasts, which are suitable for satisfying the basic requirements, have affected the formation and development process of cities. The aim of the project is to redesign the coastal areas of the city of Trabzon, a coastal city with broken connections between the urban green areas and the coastal areas, with a sensual design perspective. Ahmet's Restaurant and its surroundings, located on a parcel by the sea in Yalincak town in Ortahisar district of Trabzon province, were determined as the study field (Figure 1). The aim of the project is to design the area as a recreation area where sustainable and ecological values are observed, and to bring it back to the city, with original and qualified solution proposals, considering environmental, functional, and innovative approaches in line with the requirements and expectations of the people of Trabzon. Coastal cities, where commercial, social, and cultural life rapidly develops due to the advantages they have, have led to the concentration of urban growth in coastal areas in order to satisfy the demands of the increasing population and therefore deterioration. The destructions occurred in these highly sensitive areas have caused environmental problems as well as cutting off the connection of the citizens of the city with the coasts, where they satisfy their social interaction and recreational requirements. Therefore, within the scope of the CTP V Project course in 2020-2021 Spring Term, it has been decided to carry out the landscape design of the coast and its surroundings, where the relationship between the city and the coast can be examined.

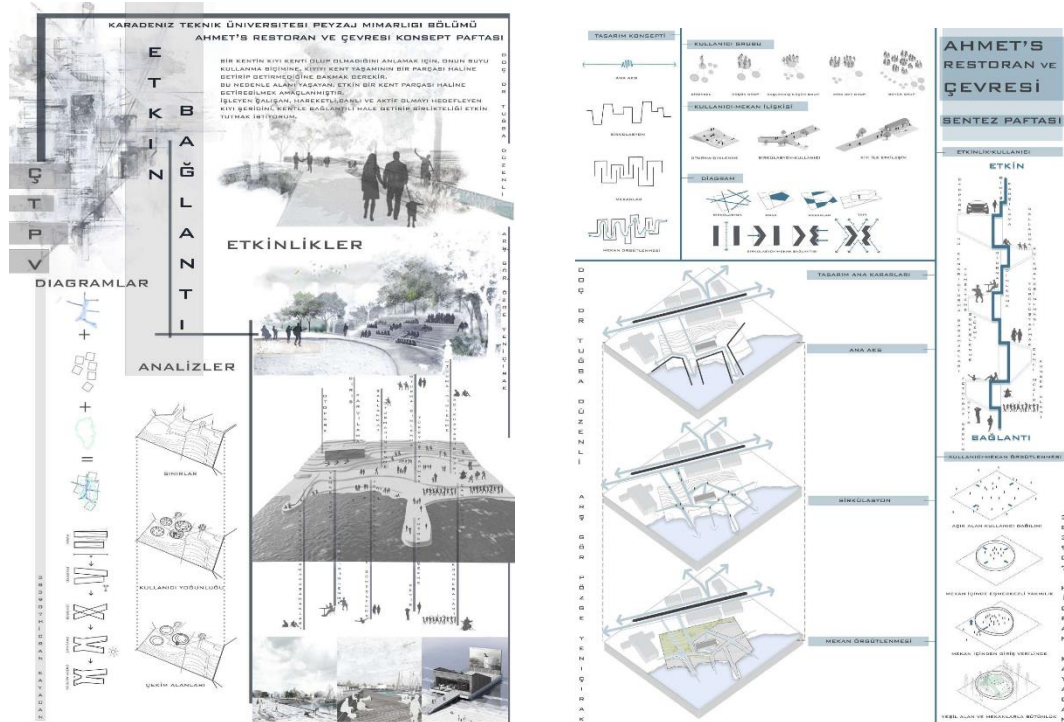


**Figure 1:** The study field of the project of Ahmet's Restaurant and Its Environment



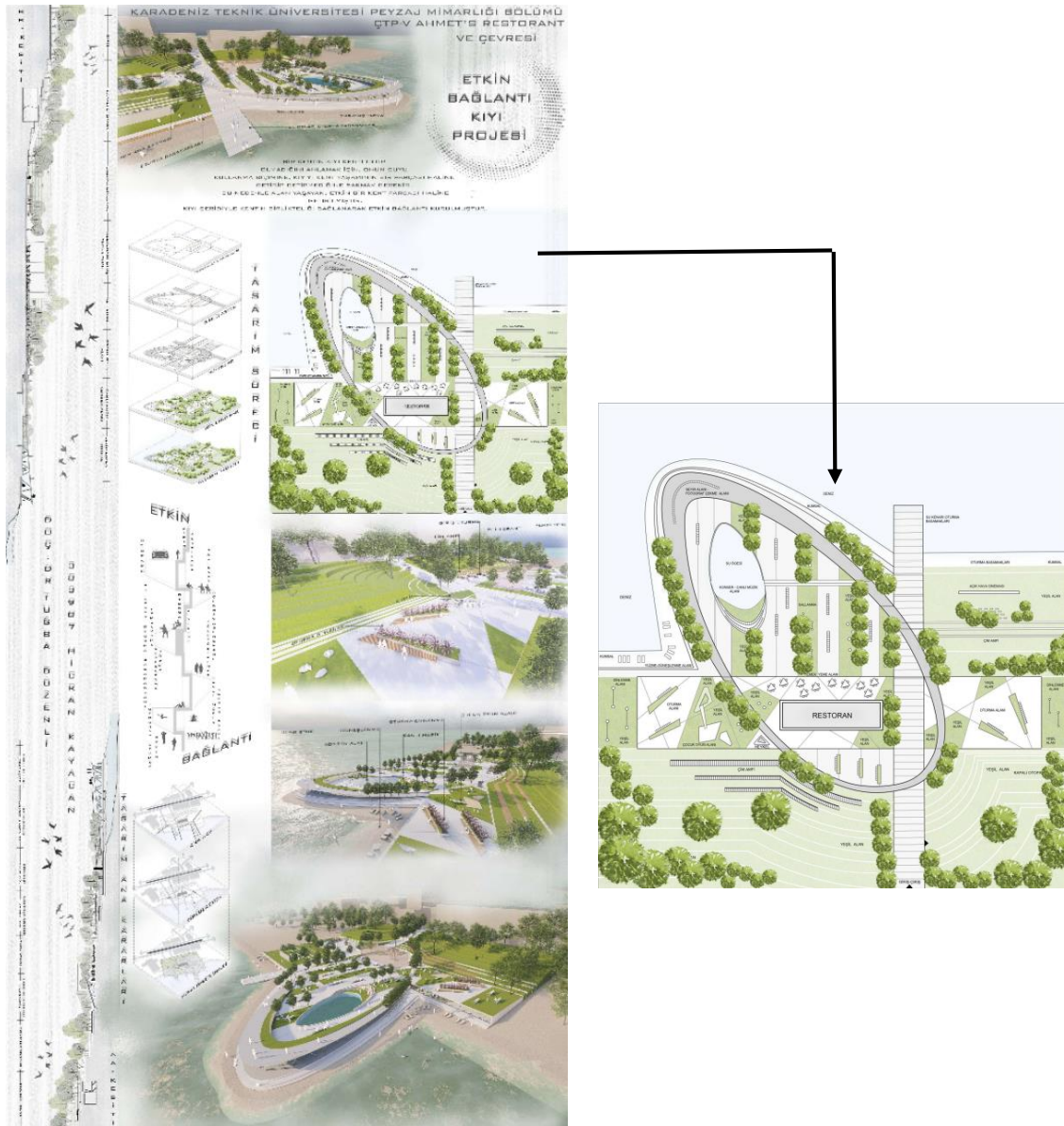


## STUDY NUMBER 1



**Figure 2: Concept and analysis presentation board**

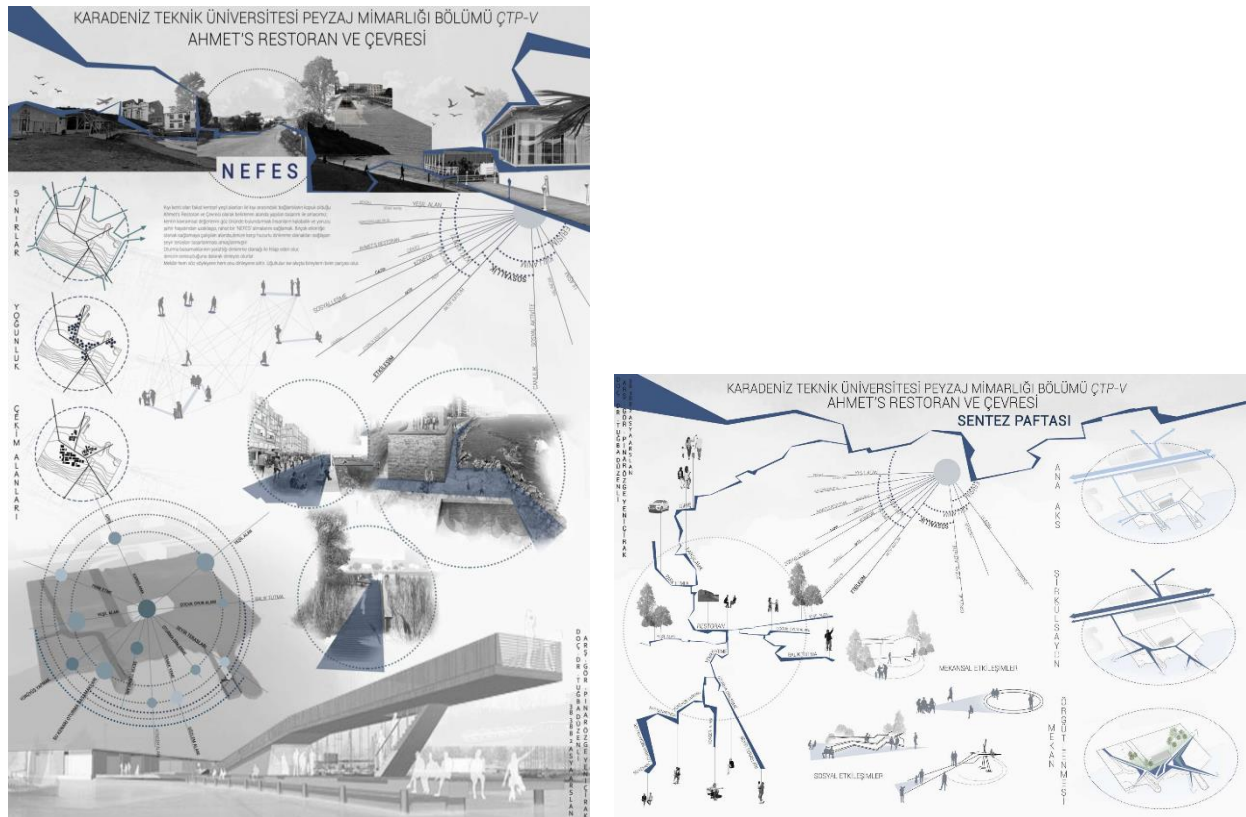
In the study no. 1, the student determined the concept of "active connection" as the design concept. The student has adopted a design approach that appeals to all age groups and all senses. He/ she aimed to effectively connect the sea-coast relationship with the restaurant and to provide users with all the sensual processes of water (touching the water, psychological relaxation by watching the water, hearing the water etc.). For this purpose, he/ she first prepared a concept presentation board, determined the activities and places related to the concept that could appeal to all senses. Then, he/ she analyzed the types of transportation and usage, and user types (Figure 2). He/ she has determined different functions in accordance with the area, the coast and the concept and carried out the outdoor space designs with this perspective.



**Figure 3:** Final design and presentation board

It is aimed to establish a sensual communication with water by designing an escalatory wide platform and an indoor pool with steps that enable users of entire ages to perform activities in the coastal part. In addition, wide grass surfaces were designed, and the water element was used together with activities such as lying on the grass, resting, reading a book, watching, playing games. Thus, a dominant space was designed that appeals to all audio-visual senses. In this part, a cover element has also been designed and the use of the space under entire weather conditions has been considered. By adding the sitting steps on the elevations, it was aimed for the users to spend time in natural areas, to interact with nature, to perform sensual activities such as watching and breathing (Figure 3).

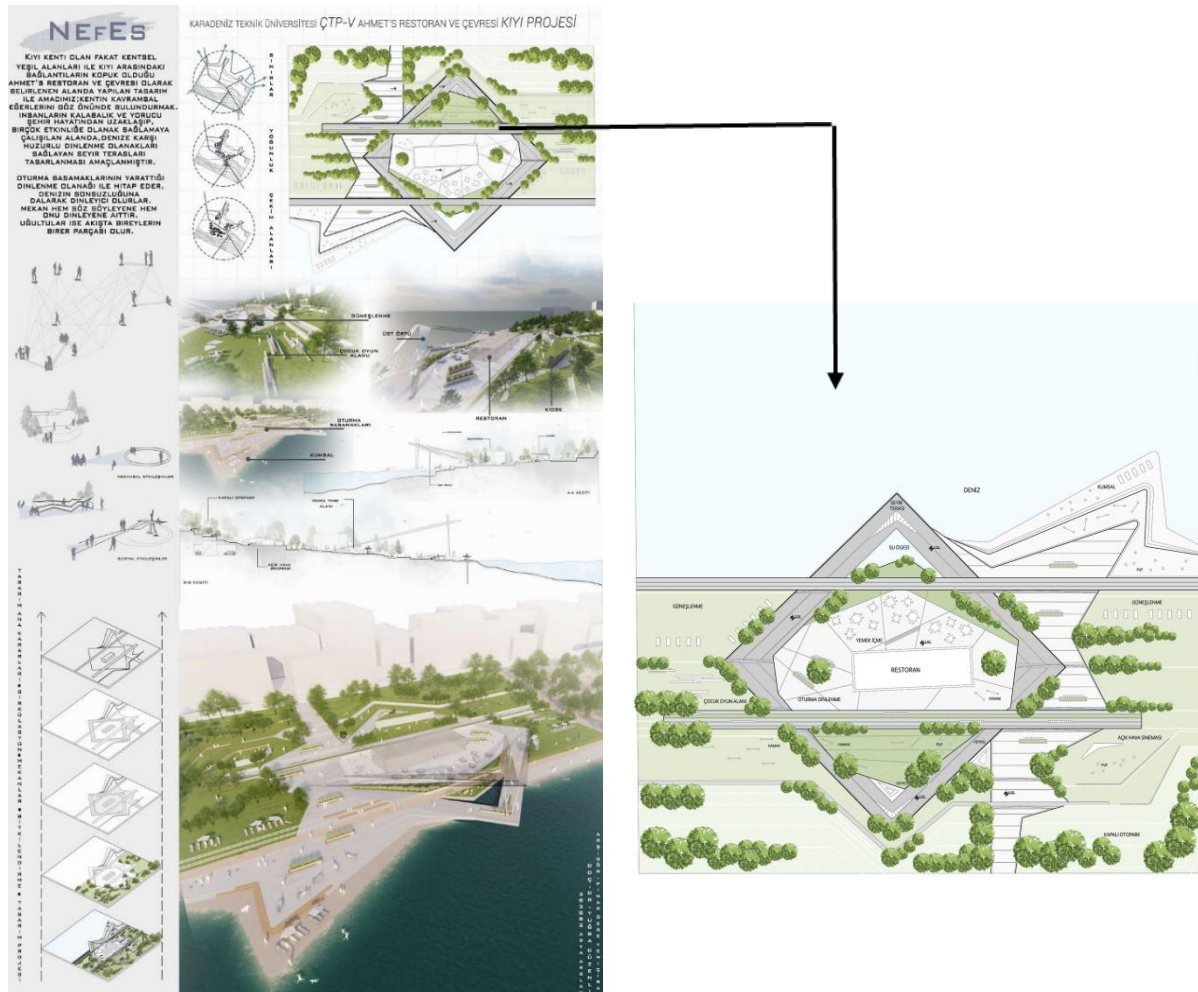
## STUDY NUMBER 2



**Figure 4:** Concept and analysis presentation board

In the study no. 2, the student determined the concept of "breath" as the design concept. He/ she has adopted a design approach that appeals to entire age groups and senses. He/ she aimed to design this area, which includes the sea and the coast, as a space that revives the entire senses of people by means of breathing. Different functions have been determined for this concept and outdoor space designs have been actualized with this perspective. He/ she then completed the analysis of user types and transportation (Figure 4). He/ she has determined different functions in accordance with the area, the coast and its concept and actualized the outdoor space designs with this perspective. He determined the restaurant building as the focal point, associating the building with the coast, sea and nature, and revealed a design approach that focuses on the senses.





**Figure 5:** Final design and presentation board

The restaurant part has been brought into focus with a square, and the sensual use of water is aimed with the protrusion given to the sea and the pool taken in. By designing large grass areas that allow users of all ages to do activities, the element of water is used together with activities such as lying on the grass, resting, reading, watching, playing games. Thus, a dominant space was designed that appeals to all audio-visual senses. A cover element has also been designed on the dominant square, and the use of the space under entire weather conditions has been considered. Sunbathing and swimming activities on the beach were also designed to enable the use of visual, auditory, and tactile senses (Figure 5).



## STUDY NUMBER 3

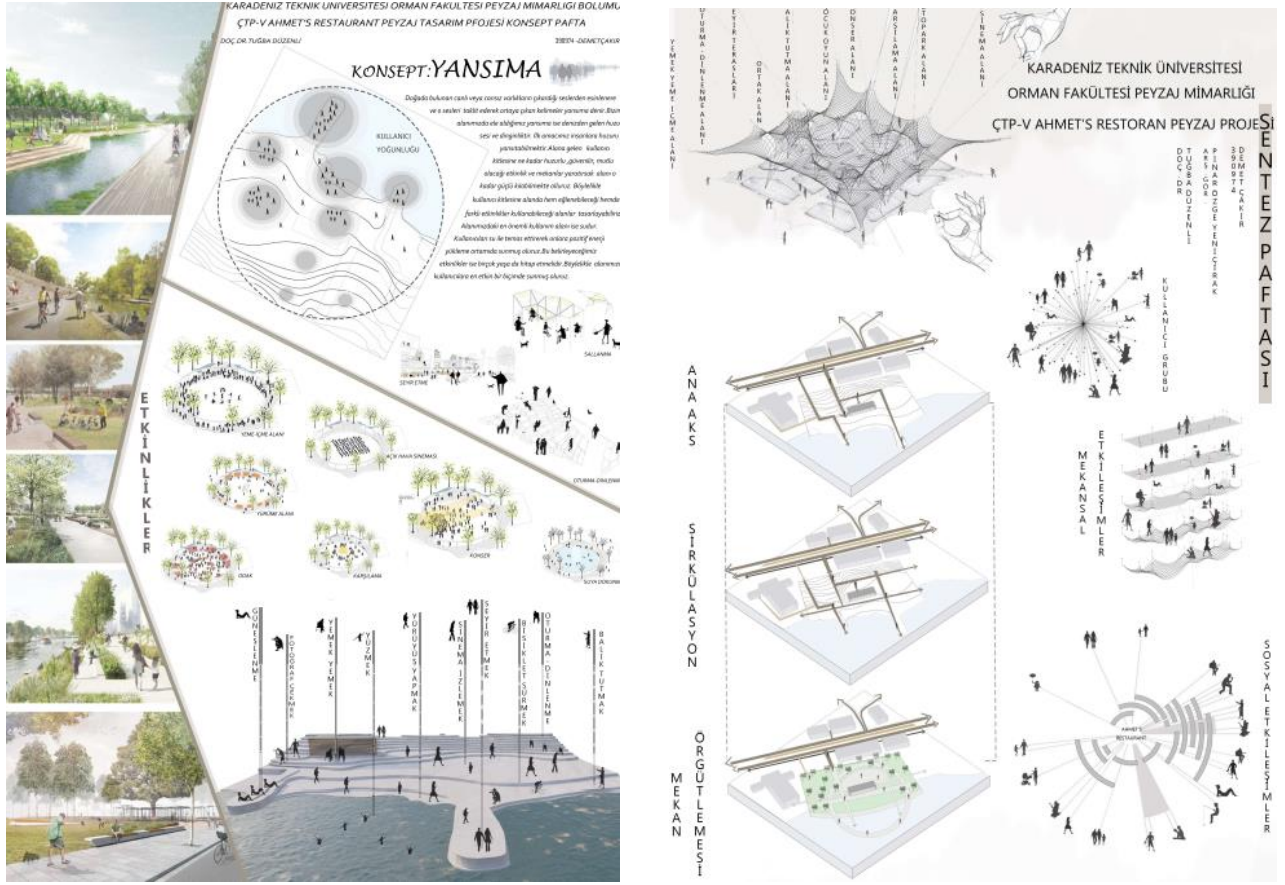
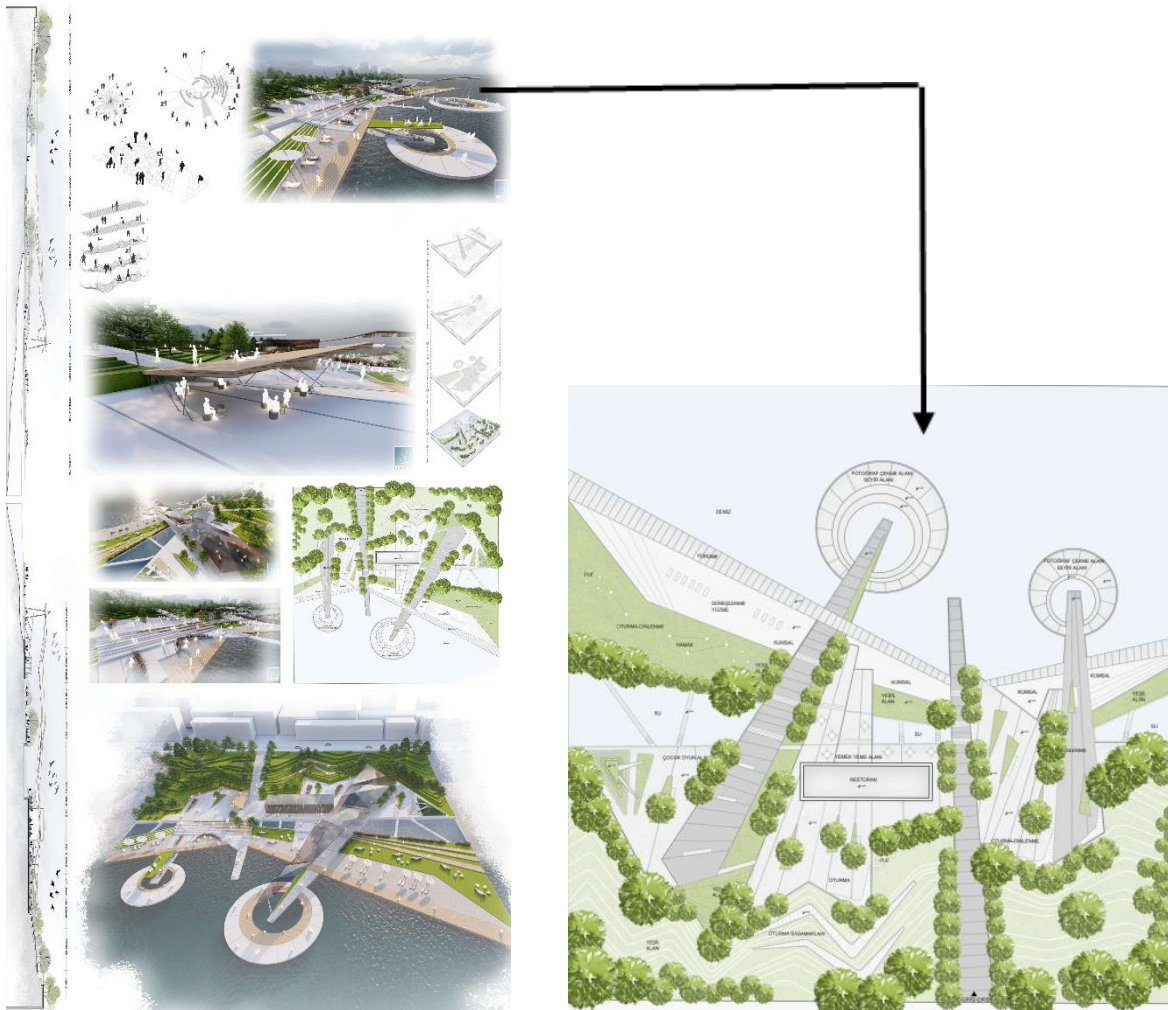


Figure 6: Concept and analysis presentation board

In the study no. 3, the student determined the concept of "reflection" as the design concept. It has adopted a design approach that appeals to entire age groups and senses. Based on the reflective nature of the sea, it has established a relationship with the coast and considered the restaurant environment as a reflection of the water. At this stage, he/ she determined the activities related to the concept and created a sensual design process by associating the reflection of the water with the user activities. He/ she has determined different functions for this and actualized outdoor space designs with this perspective. He/ she then completed the analysis of user types, and transportation (Figure 6). He/ she determined the sea as the focus, and by associating the structure with the coast, sea and nature, he/ she revealed a design approach that focuses on the senses.



**Figure 7:** Final design and presentation board

Based on the concept of reflection, two different platforms were created in the sea, and it was aimed to establish both tactual, audible, and visual a relationship with water by giving elevation to the inner part of them. In the restaurant section, wide grass areas are designed that allow users of entire ages to do activities, and the element of water was used together with activities such as lying on the grass, resting, reading a book, watching, playing games. Thus, a dominant space was designed that appeals to all audio-visual senses. (Fig. 7). A dominant cover element has also been designed, and the use of the space in all weather conditions has been considered. Sunbathing and swimming activities on the beach were also designed to enable the use of visual, auditory, and tactual senses.

## 5. CONCLUSION AND RECOMMENDATIONS

Design and landscape architecture education has its aspects that are difficult to understand for both students and educators. Almost all the methods chosen to experience the concept of space in a tangible way from the first grade remain in conflict about how they work or whether they can be substituted with another method. In this study, the outdoor space design and the experience of the space are revealed through the sensual design process. Ahmets restaurant, designed by means of sensual design, has achieved creative designs that offer a variety of activities aimed at feeling and experiencing the outdoor spaces on the coast and its surroundings with the senses.





Multi-sensual environmental design education is an environment to provide a mindset about the sources of inspiration to be used in design process. This educational environment is an environment where the awareness on the significance of the interaction and complementary characteristics of the senses, which cannot be a sufficient source of information on their own, for design is ensured. The applied design workshop creates sensual designs that are felt and adopted by using the stimulating effects of the environment in the designs of the student. In addition, it is a mental education process as it serves to conceptualize the environmental information acquired by the student in the mind of the stimulant effects and transform them into meaningful stimuli by associating them with the design.

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