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Landscape Design Approach in Special Education School

Özel Eğitim Kurumlarında Peyzaj Tasarım Yaklaşımı

Zeynep PİRSELİMOĞLU BATMAN [1]
Department of Landscape Architecture, Faculty of Agriculture, Bursa Uludağ University, Bursa, Türkiye

Elvan ENDER ALTAY [2]
Department of Landscape Architecture, Faculty of Agriculture, Bursa Uludağ University, Bursa, Türkiye

Sena ŞENGÜL [3]
Department of Landscape Architecture, Faculty of Agriculture, Bursa Uludağ University, Bursa, Türkiye

Merve Ceren YILDIZ [4]
Department of Landscape Architecture, Faculty of Agriculture, Bursa Uludağ University, Bursa, Türkiye

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Corresponding Author / Sorumlu Yazar: Zeynep PİRSELİMOĞLU BATMAN

E-mail: zeynepbatman@uludag.edu.tr

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ABSTRACT

Special education schools and their gardens are priority places that will facilitate their adaptation to real life in addition to providing education to many students with different characteristics. In this study, the planning and design process was evaluated by examining the garden approaches in the schools where individuals with special educational needs are educated. In addition, it is aimed to determine the landscape design criteria by considering the planning and design approaches made in line with different vocational backgrounds in schools where individuals with special education needs are present. The study area is the garden of Nilüfer Special Education Vocational School in the Nilüfer district of Bursa. The study area covers the greenhouse and the olive grove in front of it, which serves within the scope of agricultural education. In the method of the study, the landscape design process and the criteria that can be used in this process are discussed. Based on these criteria and the landscape design process, a landscape design was made for the area. By keeping the physical facilities of the area, user requests and expectations, and user profile in the foreground, the design process was handled and a proposed landscape design was put forward.

Keywords: Special education, Landscape design, Disabled student, Landscape design criteria

ÖZ

Özel Eğitim Okulları ve bahçeleri farklı özellikteki birçok öğrenciye eğitim vermenin dışında aynı zaman da gerçek hayata uyum sağlamalarını kolaylaştıracak öncelikli mekanlardır. Bu çalışma ile özel eğitim gereksinimi olan bireylerin eğitim aldıkları okullardaki bahçe yaklaşımları incelenerek planlama ve tasarım süreci değerlendirilmiştir. Bunun yanısıra özel eğitim gereken bireylerin bulunduğu okullardaki farklı meslek altyapıları doğrultusunda yapılan planlama ve tasarım yaklaşımları da ele alınarak peyzaj tasarım ölçütlerinin belirlenmesi amaçlanmıştır. Çalışmanın amacı doğrultusunda özel eğitim meslek okulu bahçeleri kapsamında peyzaj tasarım süreci ortaya koyulmuştur. Çalışma alanı Bursa'nın Nilüfer ilçesi Fethiye Mahallesi'nde Nilüfer Özel Eğitim Meslek Okulu bahçesi içerisinde bulunan sera ve çevresidir. Çalışma alanı tarım eğitimi kapsamında hizmet veren sera ve önündeki zeytinlik alanı kapsamaktadır. Çalışmanın yönteminde peyzaj tasarımı süreci ve bu süreçte kullanılabilecek ölçütler ele alınmıştır. Bu ölçütler ve peyzaj tasarım süreci temel alınarak alan üzerinde peyzaj tasarımı yapılmıştır. Alanın fiziksel imkanları, kullanıcı istek ve beklentileri, kullanıcı profili ön planda tutularak tasarım süreci ele alınmış, öneri bir peyzaj tasarımı ortaya koyulmuştur.

Anahtar Kelimeler: Özel eğitim, Peyzaj tasarımı, Engelli öğrenci, Peyzaj tasarım kriterleri

Introduction

Schools are institutions that enable children to grow up, develop, and prepare for the future in a specially arranged social and physical environment and line with appropriate learning conditions. While schools contribute to the educational and psychological development of students, they should be evaluated as a whole with the school building and garden, as well as the quality of the teaching staff (Aksu & Demirel 2011). Schools and schoolyards are areas that support and affect children's psychological, social, emotional, physical, and mental development (Pouya et al., 2016). As teachers and children continue to experience loss of time, control, and space in their lives, the garden is a powerful leverage point to reverse these processes. A living garden is an important force in reshaping school culture (Thorp & Townsend, 2001). Special Education Schools and gardens, on the other hand, are priority places that will facilitate their adaptation to real life, apart from providing education to their students due to their different characteristics. The purpose of special education is to ensure that individuals in need do not become an obstacle for them in areas where they are inadequate.

In addition, it is to provide individuals with disabilities with skills that enable them to be self-sufficient and integrate with society, allowing them to be independent and productive individuals at the same time. In areas where special education is provided, the achievements of the student by living, playing, and experiencing in open spaces are as important as the experiences and knowledge gained from school and other educational tools (Aksu & Demirel, 2011; Ergül, Baydık & Demir, 2013; Pouya & Bayındır, 2021). The designs of school gardens are of great importance for students with disabilities and those who need special education. Gardens of special education schools should be spaces that should be designed to develop, socialize, heal, reintegrate, and move students (Pouya & Bayındır, 2021).

While the design process includes multiple concepts, it is also a complex process that includes the relationships between these concepts. While planning and designing school gardens, the age groups of the students who will benefit from these areas, the wishes of children, teachers, and parents, as well as the opinions of the pedagogues should be kept in the foreground. After these are determined, it should be determined which functions will be brought into the garden, their size and place in the garden, and which elements will be included. It is aimed at creating interrelated spaces that can respond to user needs and activities (Erdönmez, 2007; Özkan, Alpak, & Düzenli, 2016). Other principles to be considered together with landscape design principles in the process of arranging the gardens of special education schools (Pouya & Bayındır, 2021);

• Ergonomics and usability; Designs that integrate with the use of space should be made by considering the ergonomic measures of the disabled individuals according to the disability types.

• Designing Spaces and Activities that Support Physical Mobility in School Gardens; Special education school gardens should be designed to support the physical mobility of students with disabilities according to their disability types. In this way, the muscles of the students and their physical mobility skills develop. This provides psychological and physical support to students.

• Practice Gardens and Nature Education in School Gardens; For disabled students, places with different natural formations and creating an intriguing compressed nature effect should be created in school gardens and private education schools. For this reason, it is necessary for the school garden to meet the basic needs of children with disabilities and to determine the use of areas compatible with nature for the children's disabilities.

• Activities Designed for the Socialization of Children with Disabilities; For disabled children to socialize, improve their communication skills, and make friends, application gardens, accessible and ergonomic spaces that support nature education and mobility should be built in school gardens.

• Spaces Designed to Appeal to Different Senses of Children with Disabilities; When creating natural environments for children's disability types, appropriate equipment should be used in this direction. For this purpose, gardens can be designed for children's senses of hearing, sight, smell, and touch.

• Plant Selection; Considering the perceptions of children with their senses such as hearing, seeing, and smelling; planting design should be done.

In this study, the planning and design process was evaluated by examining the garden approaches in schools attended by individuals with special educational needs. The design studies in the field where the application is made in line with the agricultural education in the school, where the individuals who need special education are located, were evaluated and discussed with the principles of landscape design. In line with the purpose of the study, the greenhouse and its surroundings in the garden of Nilüfer Special Education Vocational School, the regulation process within the scope of agricultural education has been revealed.

Material and Methods

The study area is the greenhouse and its surroundings in the garden of Nilüfer Special Education Vocational School in the Fethiye neighborhood of the Nilüfer district of Bursa. The mission of the Nilüfer Special Education Vocational School is to ensure that the student gains the basic skills of the job and profession, which adopts the education system that takes into account his developmental and individual characteristics and is supported by artistic, cultural, social, and sports activities in the development process of the individual. In this process, the family can participate in the education process. In this direction, it is to employ a job so that they can be self-sufficient, beneficial to their family and society, and harmonious and productive individuals. Within the school, there are a furniture and interior design area, handicrafts area, catering services area, printing technology area, ceramic and glass technology area, textile technology area, agriculture area, and music workshop departments (URL-1). The study area covers the olive grove in front of the greenhouse area serving within the scope of agricultural education (Figure 1 and 2).

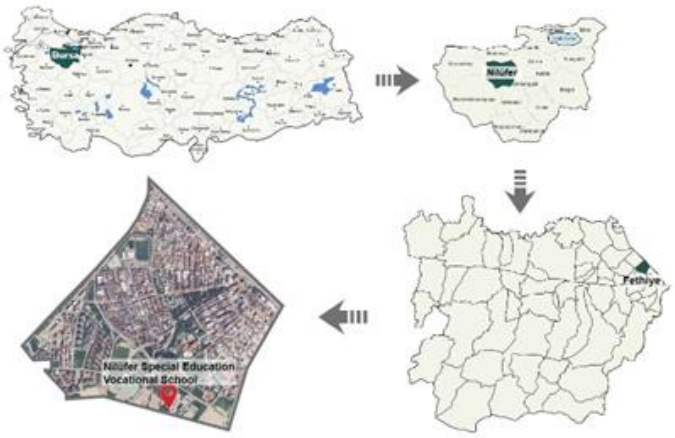

Figure 1. Location of Study Area

The method of the research,

1. Determining the wishes and needs of special education students,

2. Determining the criteria to be included in the design process in line with their wishes and needs,

3. Evaluation of the determined criteria in Nilüfer Special Education Vocational School

4. Nilüfer Special Education Vocational School's greenhouse environment was carried out in 4 stages, including the design of proposal studies.

The first stage of the method is the stage where the problems in the field are determined, the design problem is discussed, the purpose of the design is revealed, and the wishes and needs of the users are defined. In line with the face-to-face interviews with the school administration and teachers, first of all, the

tendency of the students to use the school garden and the wishes and needs of the teachers and administrators who will use this place apart from them were determined.

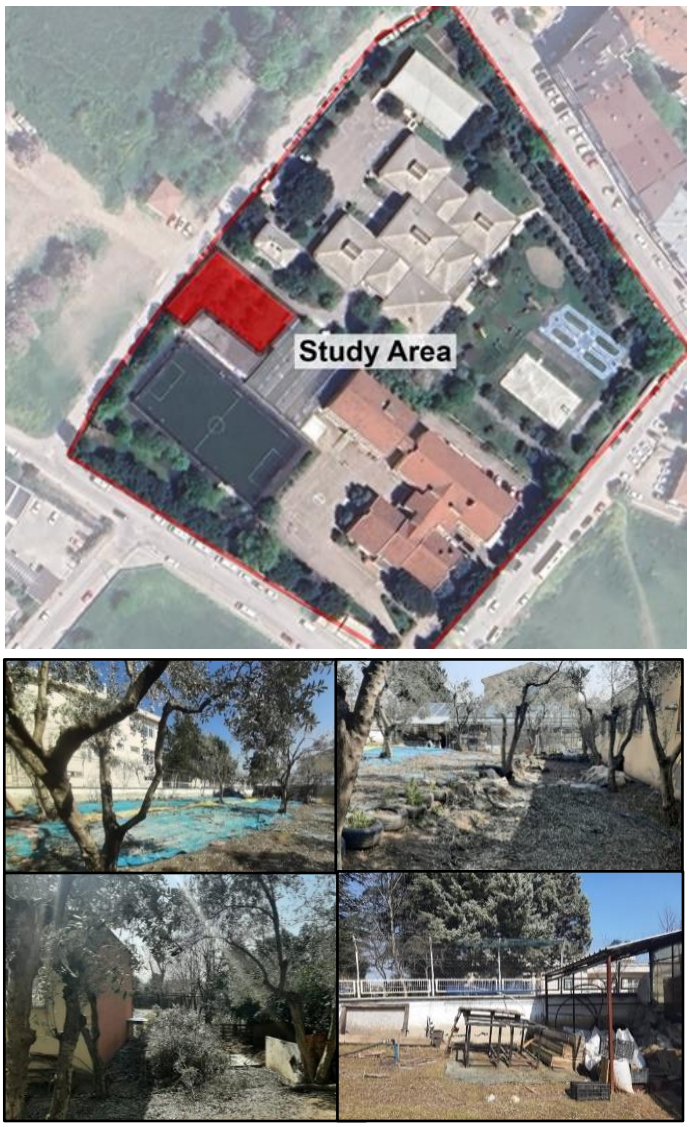

Figure 2. Study Area

In the second stage of the method, was taken into consideration based on the studies of; Lynch (1960), Alexander & Poyner (1970), Gehl (1971), Smardon (1979), Jarvis (1980), Whyte (1980), Carr et al. (1992), Strumse (1994), Van Mansvelt & Kuiper (1999), Hooke (2000), Sternberg (2000), Tibbalds (2000), Weinstoerffer & Girardin (2000), Aklanoğlu (2002), Carmona (2003), Clay & Smidt (2004), Özer & Ayten (2005), Aytem (2005), Günal & Esin (2007), Oktay (2007), Watson & Bentley (2007), Crankshaw (2008) , Semerci (2008), Temelli (2008), Taşçı (2012), Song & Yan (2013), Jafarzadeh & Uslu (2014), Şahin (2015), Erdönmez & Çelik (2016), Aytaş (2017), Uzgören & Erdönmez (2017), Durak (2018), Şahin (2018), Argan (2019), Alpuguz (2019), Ender Altay & Pirselimoğlu Batman (2019), Cabarkapa & Djokic (2019), Hançer (2019), Health (2020), Pouya & Bayındır, (2021); Altay et al. (2021), Karacor et al. (2021).

Evaluation of the landscape project process based on the study area is the third stage of the method; It is the step of determining the main idea of the design, field analysis, and survey work.

Survey: It is the process in which the natural (topography, climate, water availability, vegetation, etc.) and cultural (population, economic situation, transportation, infrastructure, historical data, etc.) resource values of the area are determined and transferred on a scaled basis on the plan.

Field analysis; Landscape design analysis should be made that will respond to the existing data of the area and the wishes and expectations of the users. With the field analysis, answers are sought for some questions in the titles of field potential, field problems, field comfort, and dangerous conditions in the field. (source: lecture notes)

• Field Potential: How can the field be best used? What resources are available in the field?

• Area Problems: What should be considered? What to renew and remove?

• Comfort of Space: What features are remarkable and valuable?

• Hazardous Conditions in the Area: What can be dangerous?

Determining the main idea of the design: Theme and concept concepts in architectural design are discussed at this stage, and the main idea of the landscape project approach to be made on the Site is determined.

Theme and Concept notions point to design. With this starting point, the wishes and expectations of the users and the use of space are determined in line with the main idea of the subject. Afterward, the requirements for the solution are handled with a special approach that brings together content, context, and thoughts. In other words, the linear expression of the Project becomes clear. Based on this approach, determining the factors and land use decisions that are in line with the essence of the problem and determining their relations are discussed. In addition to this, making alternative settlement decisions on the land, developing the internal and external main circulation assumptions, grouping the spaces by considering their relations, and arranging the relations of the grouped spaces.

In the fourth and final stage of the study, the criteria determined were evaluated by observing and analyzing the field. With the data obtained from the evaluation, the greenhouse area of the Nilüfer Special Education Vocational High School was designed. Autocad, Sketchup, Lumion, and Photoshop programs were used in the design process.

Results

1. Determining the wishes and needs of special education students

It is a stage in which the problems in the area are determined together with the users of the area and again the wishes and needs of the users are determined. At this stage, we discussed the outdoor use of the students of this school with special needs, together with the teachers of the course. The study area is the greenhouse and its surroundings in the school garden. This area is a continuation of the lessons and classes for agriculture students. In this direction, students and teachers will use this area both within the scope of the lesson and in their spare time breaks. How do they use the available space for this purpose? Information about? Their ideas about how they want to use this area were evaluated. In line with their use in this area, the deficiencies in the greenhouse, the deficiencies in the open field; The lack of a suitable area for the lesson, the absence of an area where the products can be placed, the lack of an area to store the

equipment, the inability of the chickens on the area to live in suitable conditions, the deficiencies of the areas suitable for growing products, regular and for disabled students were discussed and noted. In addition, an evaluation was made of the current situation and uses in the open area other than the greenhouse. The open area is neglected and has 8 olive trees. The idea of developing the proposal by keeping these olive trees stable was considered a joint decision. In line with the ecology-based teachings of agriculture students and teachers and their field use requests, the demand and need for compost areas have come to the fore.

2. Determining the criteria to be included in the design process in line with their wishes and needs

Within the scope of the study, the landscape design process that can be applied in the gardens of Special Education Vocational Schools has been revealed with criteria by evaluating the sources and examples. Table 1 shows how this process was handled in Nilüfer Special Education Vocational School.

Landscape project design process;

• The starting point of the main idea of the design

• Survey, Field analysis

• Land Uses; Need-Activity

• Pre-design; venues, equipment

• Final Design

Criteria to be considered for Special Education schools (Table 1);

• Basic needs

• Appropriate uses for individuals with special educational needs; Ergonomics and usability, Designing spaces and activities that support physical mobility in school gardens, Practice gardens, and nature education in school gardens, Activities designed for the socialization of children with disabilities, Designed areas that appeal to different emotions of children with disabilities, plant selection

• Uses according to the field of education (branch). For example Outdoor use for those who receive agricultural education in Nilüfer Special Education vocational school

3. Evaluation of the determined criteria in Nilüfer Special Education Vocational School

• Determination of the main idea of the design, field analysis, and survey work,

• Determining the users, creating the use of the space in line with the wishes and needs of the users, deciding the location of the spaces in the area, creating the stain diagram,

• In line with the users and land conditions and line with the main idea determined, spaces created for students within the scope of agricultural education, open classroom areas, determination of circulation, orientation-connection-determination of places, creation of their forms, preliminary design phase,

• Spaces created for students within the scope of agricultural education in line with the main idea and line with the users and land conditions, open classroom areas, final design phase.

• Determination of the main idea of the design, field analysis, and survey work

The project, which was prepared within the scope of the Nilüfer Special Education Vocational High School Open Course-Practice Area design project, was based on the students and teachers of the school. With the inspiration taken from the students of the school, the study was developed by determining the starting point in the design, Theme- Uniqueness, Concept- Galanthus (snowdrop) (Figure 3). Snowdrop, a type of flower from the daffodils, is a unique flower that can bloom not only on snow but even on water if the appropriate environment is provided. Most of our users are mentally handicapped students. If suitable conditions are provided for them, they can provide the condition of being unique like every individual. In this context, the idea of the study was developed by referring to these rare flowers in the lines of the project.

At this stage, the current state of the area was also determined by conducting a field study. The location of the area, its climatic features, the plant material in the area, and the points where entry and exit can be made have been determined.

Figure 3. The Starting Point of the Main Idea of the Design- Uniqueness- Galanthus (snowdrop)

• Determining the users, creating the use of the space in line with the wishes and needs of the users, deciding the location of the spaces in the area, creating the stain diagram

It is an area that will be used by all students and teachers of the school, mainly the students of the agriculture department within the Nilüfer Special Education Vocational High School. The school is a Bursa/Nilüfer Special Education Vocational School. There are mentally disabled individuals within the school. In this direction, without age limitation, since the users are both students who need special education and students of the agriculture department, their needs are handled accordingly and evaluated as Basic needs, Appropriate needs for individuals in need of special education, and needs for those who receive agricultural education. User Density is an important factor in deciding the size of the space.

In general, there are 144 students and 51 teachers in the school. On the other hand, the number of students receiving agricultural education is 10. In this direction, sitting activity for resting and socializing, chatting activity and places to perform these activities, a seating unit for sitting, a cover unit at a suitable point, and a camera proposal have been developed and suitable points have been determined in the study area. It was determined that the area was entered from the school building to the greenhouse. In addition to the spaces, the entrance from the greenhouse and the entrance from the idle classroom building were also evaluated. Circulation supporting accessibility for users within the work area has been evaluated. Spaces have been developed in line with the activities of listening to lectures and participating in the practices of the courses in line with education and outdoor course opportunities, the development of physically and visually impaired individuals, and opportunities to acquire a profession, the opportunities to explore agricultural activities. While developing vegetable beds and medicinal plant beds within

the scope of agricultural education, a seating unit and table and sitting steps that all students can use as a lesson area have been proposed. In addition to these, a poultry proposal has been developed for raising poultry to experience nature. A compost area has been proposed for efficient energy use, to store rainwater, and to separate recycling products within the scope of recycling activities (Figure 4).

Table 1. The Criteria Evaluated in the Design Process and Their Contents

	The main idea of the design • Survey • Area analysis	Area Uses		Pre-Design • spaces, equipment	Definitive Design
		Necessity	Activity		
• Basic needs • Suitable uses for individuals who need special education • Uses according to the field of education (branch)	The design main idea-uniqueity- Galanthus (snowdrop), • Snowdrop is a unique flower that can bloom not only on snow, but even on water if the right environment is provided. • If suitable conditions are provided, he can provide the condition of being unique like every individual, he can be successful in difficult conditions and obstacles. -Determining the current state of the area, • Determining the positive and negative features of the field together with the current situation.	• To relax • Nutrition/ • Eating and drinking, • Socializing, • Education-Learning opportunities in open areas, • Development of individuals with physical disabilities and obtaining a profession • Development of visually impaired individuals and obtaining a profession • Exploring agricultural activities • Storage • Experiencing nature, • Energy efficient uses	• Sitting, resting • To eat • Chatting with friends, families, teachers • Listen to lectures, participate in the practices of the lectures • Growing vegetables and fruits • Storing materials • Separating products for recycling • Raising poultry • Storing rain water	• Seating units • Tables • Sitting steps • Cupboard • Vegetable beds • Medicinal plant beds • Compost area • Coop	• Created spaces • Used materials • Equipment • The plant material used • Dimensions

• Spaces created for students within the scope of agricultural education in line with users and land conditions and line with the determined main idea, open classroom areas, determination of circulation, orientation-connection-determination of places, creation of forms, preliminary design phase

The preliminary design of the study was carried out in line with the space usage suggestions determined by the main idea developed in the previous stages. Again at this stage, the spaces and the equipment were designed (Figure 5). In this context, the issues to be considered in the design of school gardens are also discussed. Ergonomic measures were taken into account while designing the spaces and equipment. Solution approaches have been evaluated for all kinds of users. The usability of the designs made is at the forefront. At the same time, attention was paid to supporting physical mobility in the design. In the school garden, solutions have been developed to support the physical movement of students with disabilities. Ideas and solution suggestions were developed for the students within the scope of nature-based education in line with their education.

All these solutions are for the socialization of disabled individuals primarily students. In addition, while designing the landscape, solution proposals were produced for everyone with an understanding of design. Spaces for the types of disabilities of students/users should be created with nature-based approaches and equipment should be used. At the last stage, plant selection should be made considering the situations of students/users.

With all these approaches, in the study, carried out in this area, areas for lessons, sitting and resting areas, eating and drinking areas, vegetable and medicinal plants growing areas, compost areas, and poultry houses were designed in line with student/user requests and needs. At this stage, a preliminary design was carried out for the planting design. Also, at this stage, a preliminary decision was made based on the use of disabled individuals and agriculture students for the planting design.

In this area, existing olive trees were protected, and vegetable and medical herb bed systems were designed. Based on the ideas of the planting design criteria made for the senses, a planting design was made for the study area.

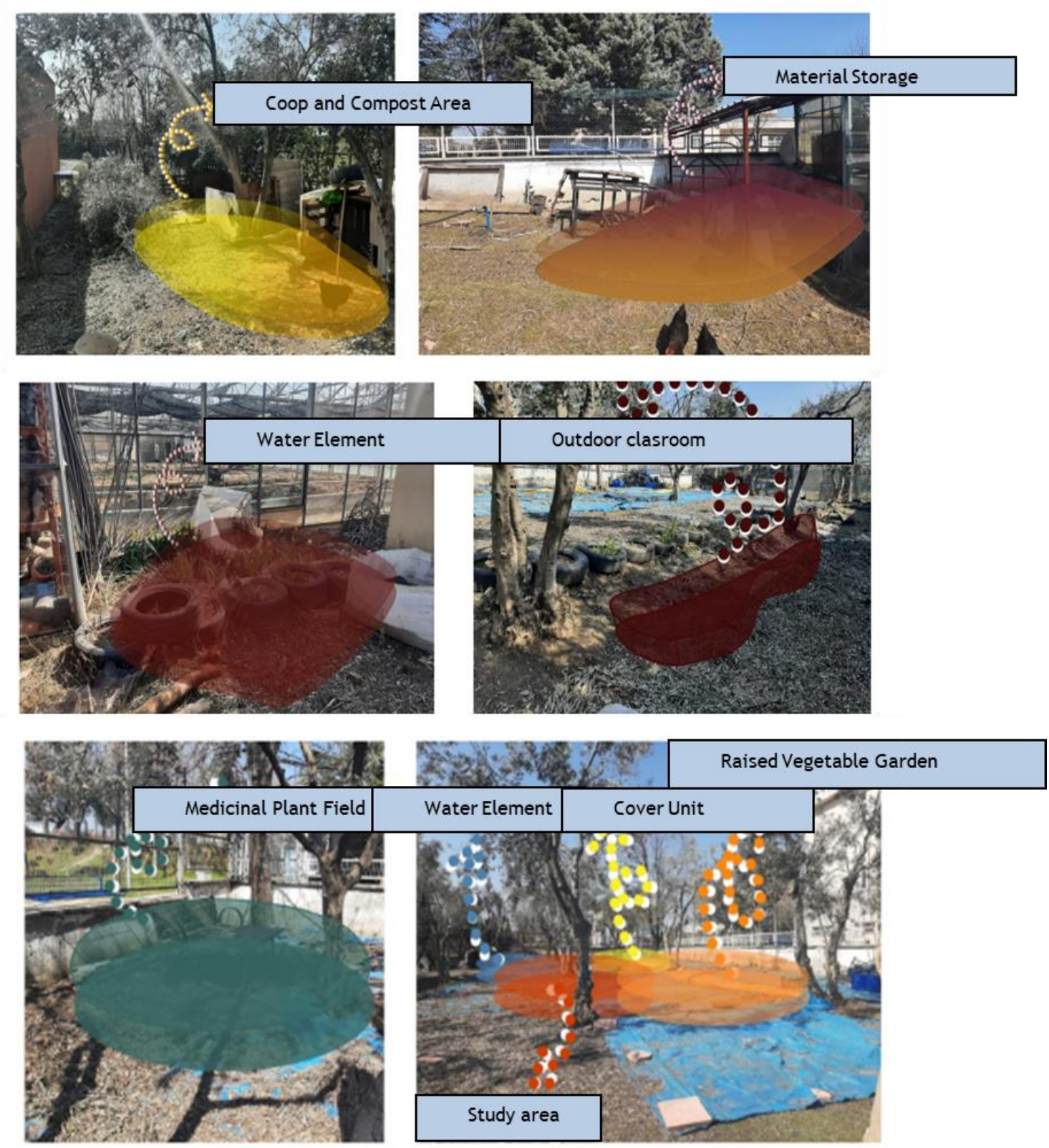

Figure 4. Area Uses Determined in Line with the Wishes and Needs of the Users and the Sections Determined on the Work Area

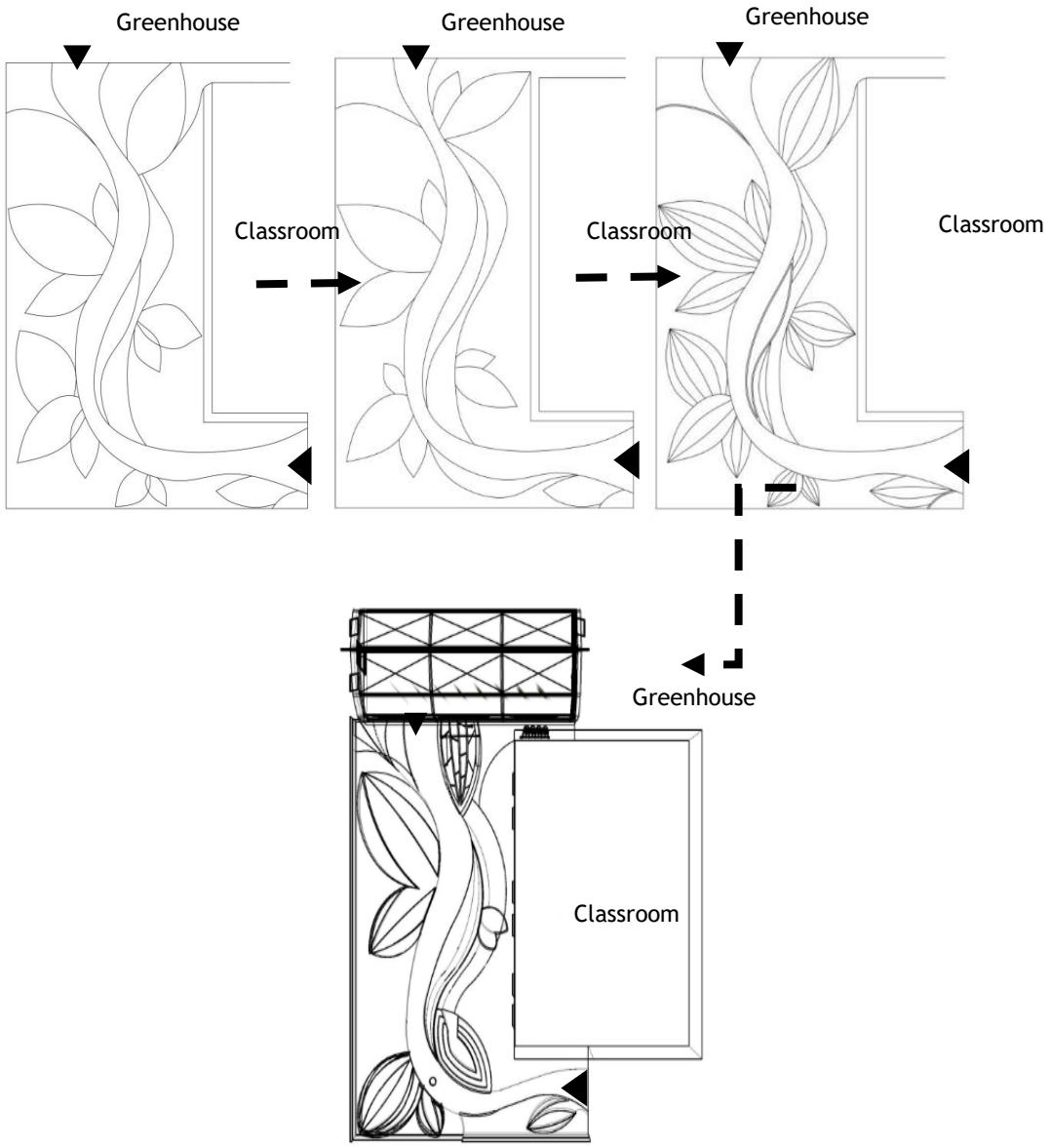

Figure 5. Sketches Developed in Line with the Concept and Preliminary Design

4. To design proposal studies around the greenhouse of Nilüfer Special Education Vocational school

• Spaces created for students within the scope of agricultural education in line with users and land conditions and line with the determined main idea, open classroom areas, final design phase

At this stage, the spaces created during the preliminary design stage were developed and detailed. Spaces have been created by the usage dimensions. In line with the usage conditions of the area, material suggestions were developed for the ground-seating units-cover units-compost area outdoor classroom-study area, and vegetable and medicinal plant growing areas.

The existing olive trees were taken under protection and arrangements were made. Plant production/growing will be done within the scope of training courses in cultivatıon areas outside of these areas. Vegetables, medicinal plants, and production will be made. In addition, the dimensions of the organized areas and the reinforcements created within the scope of these areas were made considering the application process. The area has been designed by the measurements and elevations, taking into afford the wheelchair use of disabled individuals into afford. Ramp solutions have been implemented in the area instead of stairs and step solutions for intra-accessibility. Tactile surfaces are also discussed together with floor coverings. There are some standard values and design principles that should be applied to outdoor design for individuals with special needs (ÖZİ, 2010; Kuter et al., 2017). Attention was paid to designing the equipment in the study area in line with these criteria (Figure 6,7 and 8). For walking areas, it should be at least 150cm, for stairs, the maximum riser height should be 15cm and the touchable surface should be at least 60cm, the most important feature for ramps is that it should not be steeper than 8%, the equipment for sitting and rest areas must be in a form that will not obstacle movement, for plant cases, vegetable and fruit growing cases, carefulness is taken to be at a height suitable for working.

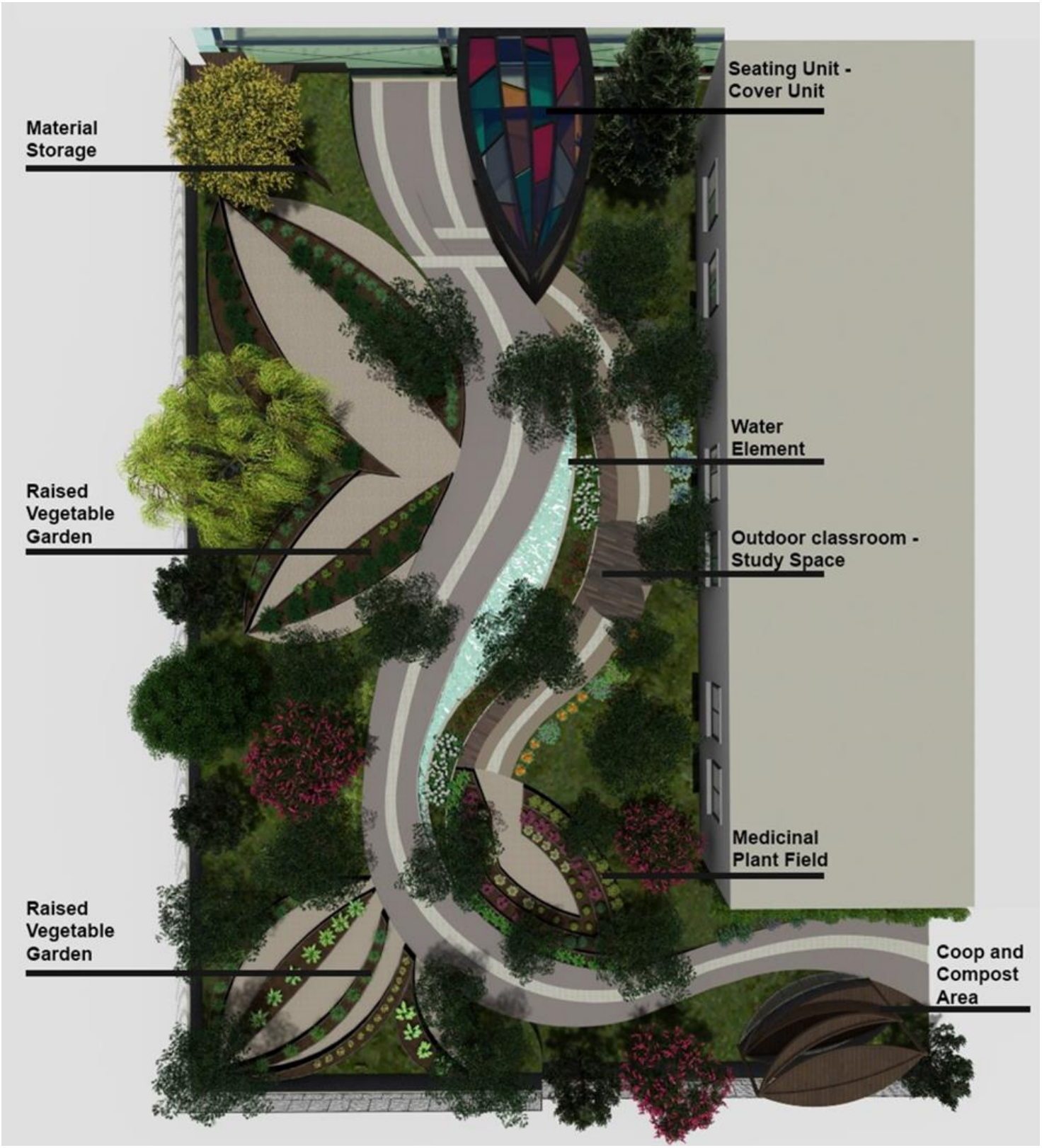

Figure 6. Plan View of the Suggested Study

Figure 7. Seating Unit-Storage Area-Covering Unit Existing Olive Trees and Their Surroundings Detail and Dimension Detail

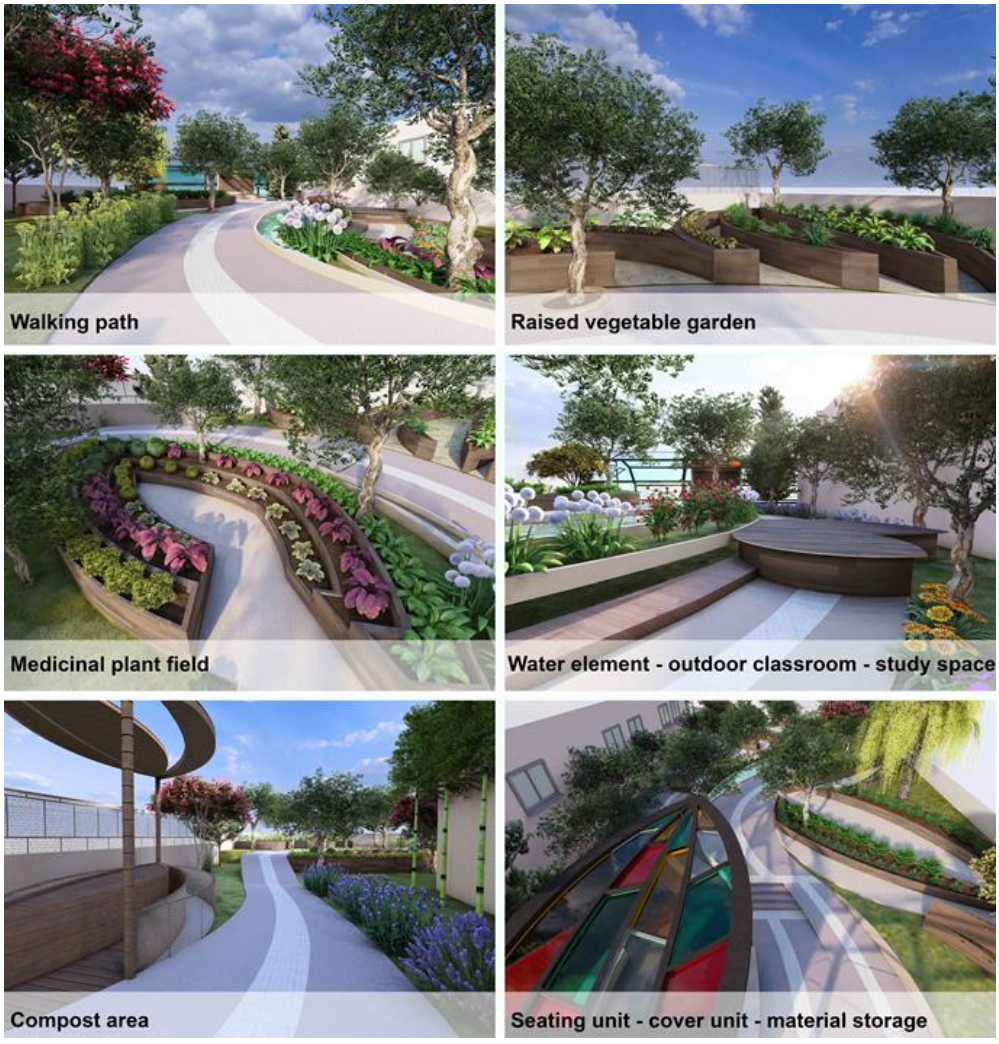

Figure 8. 3D Examples from the Field

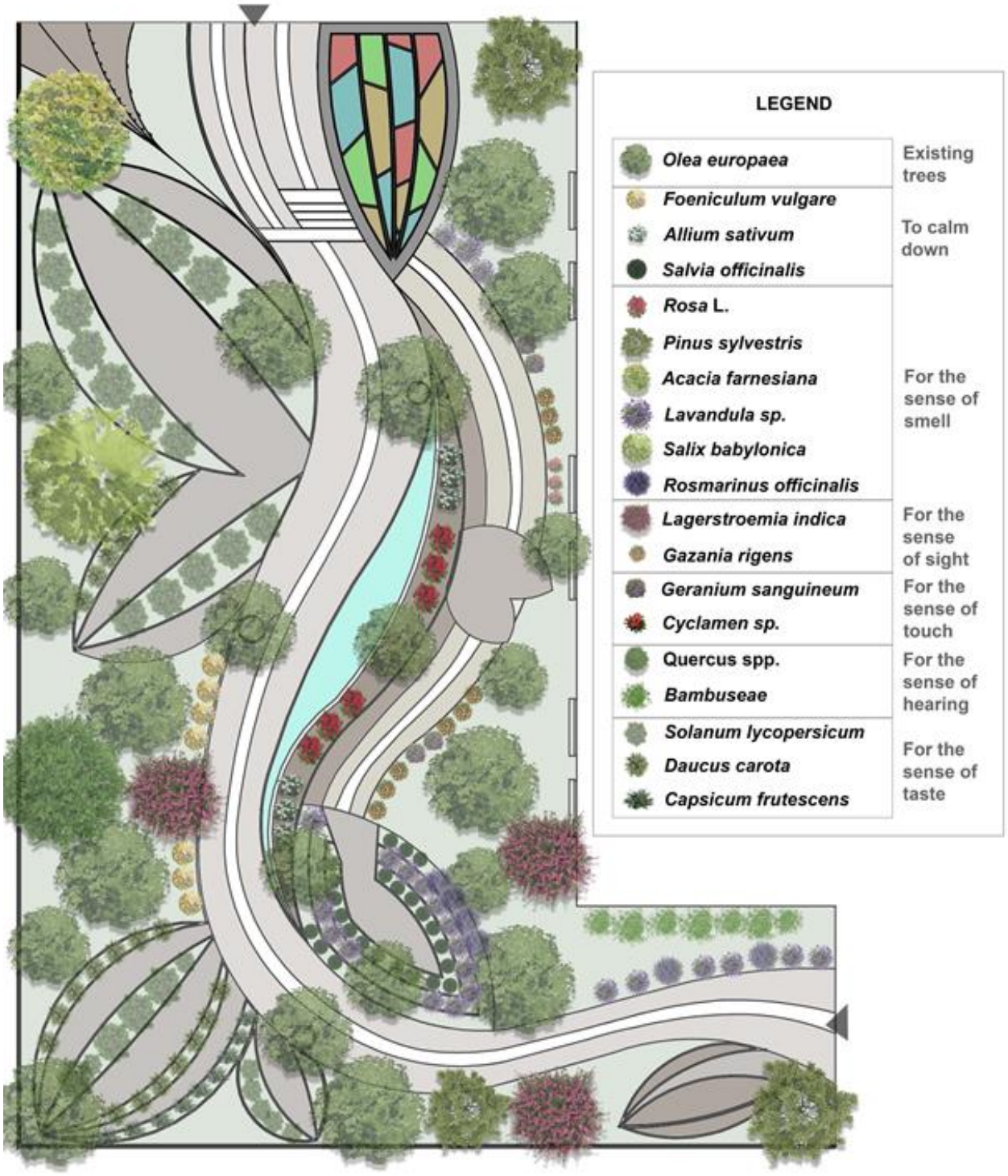

Figure 9. Recommendation planting design that appeals to the senses

In the planting design created for the study area, plants that appeal to the senses were used for individuals with special needs (Figure 9). The study of Şensoy (2017) was used in determining the plants for the senses. This study emphasized the need for species that have soothing properties for individuals with autism and that stimulate the senses of smell, taste, sight, touch, and hearing. Appropriate plants were determined for each stimulus. It was also stated that edible fruits, vegetables, and spicy plants can be used in sensory garden.

Conclusion

When the special education school gardens are evaluated based on the students, the problem of not being able to use the disabled students is seen as a result of the results. To eliminate this problem, designers should design in line with universal design principles and put these designs into practice, taking into account students with disabilities. In addition to the importance of special education school gardens for the development of students with disabilities, their families, society, and the state have

responsibilities for the survival of disabled individuals. Regulations, behaviors, words, and designs that marginalize these individuals should be avoided, and everyone should do their best to reintegrate them into society. (Pouya & Bayindir, 2021). This approach should first spread to the whole city, starting from their immediate surroundings.

The role of the user is great in the landscape design process, where natural and cultural landscape values are considered as a whole. In this project, the user's wishes and expectations were handled with a holistic landscape design approach that integrates with landscape values, and the main starting point of the design was the user group. A landscape design has been realized in which the existing resource values are integrated with the user group.

In this direction, the starting point of the main idea of design has been “Uniqueness”. While creating the outline of the design, the linear expression "Galanthus (Snowdrop)" was used to emphasize the idea of "Uniqueness". In Nilüfer Special Education Vocational School, which has outdoor use that does not integrate with the students and users within its structure, a landscape design has been made with space solutions that can be used by disabled individuals and their education needs. Within the scope of this design, the use of space in line with the physical and spiritual needs of the users and suggestions for suitable places for these uses, the ways that will provide the connection between the spaces and create circulation within the space have been designed and developed. Within the scope of education and training activities, in addition to places such as planting-planting areas, open classrooms, material warehouses, compost areas, living and resting areas for general uses, and suitable equipment for these areas were designed. In addition, planting design solutions that appeal to the senses of the users were evaluated. Plant species that respond to the senses were identified and the design was made.

This design is aimed to effectively organize the use of open spaces in the education and school process of the children in Nilüfer Special Education Vocational School. In addition, a suitable resting area alternative has emerged among the teachers, administrators, and servants working within the school. In line with these purposes, the design process was handled by keeping the physical facilities of the area, user requests and expectations, and user profile in the foreground, and a proposed landscape design was put forward.

This design has supported the physical mobility of the disabled students in the school gardens and supported the creation of spaces where students can both socialize and continue their education within the scope of their education. At the same time, the basic approaches of this design have been ergonomics. It aims to increase the usability of the project area, which was an idle and neglected area before, with this project. This aim was supported by the project solution.

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References

Aklanoğlu, F. (2002). Beypazarı peyzaj potansiyelinin saptanması üzerine bir çalışma. Yüksek Lisans Tezi, Ankara Üni. Fen Bilimleri Enstitüsü, Ankara

Aksu, V. & Demirel, Ö. (2011). Trabzon kenti ilköğretim okul bahçelerinde tasarım ve alan kullanımları. *SDÜ Orman Fakültesi Dergisi*, 12:40-46. https://doi.org/10.18182/tjf.89484

Alexander, C., & B. Poyner. (1970). The atoms of environmental structure. In emerging methods in environmental design and planning, ed. G. Moore, 5–9. Cambridge: The MIT Press.

Alpuğuz, E. (2019). Burdur Cumhuriyet Meydanının kentsel bir mekan olarak irdelenmesi. Yüksek Lisans Tezi, Burdur Mehmet Akif Ersoy Üniveristesi, Fen Bilimleri Enstitüsü, Burdur.

Argan, A. (2019). Peyzaj tasarımında işitsel ve görsel kurgunun mekân algısı ve yönetimi üzerine etkileri. Yüksek Lisans Tezi, Ordu Üniversitesi, Fen Bilimleri Enstitüsü, Ordu.

Aytaş, İ. (2017). Çankırı kentsel açık-yeşil alan sisteminin belirlenmesi. Yüksek Lisans Tezi, Çankırı Karatekin Üniversitesi Fen Bilimleri Enstitüsü, Çankırı.

Aytem N.M. (2005). Mimari mekânda renk, form ve doku değişkenlerinin algılanması. Yüksek Lisans Tezi, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul.

Cabarkapa, A. & Djokic, L. (2019). Importance of the color of light for the ıllumination of urban squares. *Color Research And Application*. 44(3): 446-453. https://doi.org/10.1002/col.22348

Carmona, M., T. Heath, T. Oc, & S. Tiesdell. (2003). *Public places, urban spaces: The dimensions of urban design*. Oxford: Architectural Press

Carr, S. 1992. *Public space*. *Cambridge*: Cambridge University Press

Clay, G.R., & Smidt, R.K. (2004). Assessing the validity and reliability of descriptor variables used in scenic highway analysis. *Landscape, and Urban Planning*, 66(4). https://doi.org/10.1016/S0169-2046(03)00114-2

Crankshaw, N. (2008). *Creating vibrant public spaces: Streetscape Design in Commercial and Historic Districts*, 2nd ed. Washington, DC: Island Press.

Durak, H. (2018). Tarihi kent meydanları ve donatılarının peyzaj mimarlığı açısından irdelenmesi; Sultanahmet Meydanı örneği. Yüksek Lisans Tezi, Süleyman Demirel Üniveristesi, Fen Bilimleri Enstitüsü, Isparta.

Ender Altay, E. & Pirselimoğlu Batman, Z. (2019). Açık ve yeşil alanların çok ölçütlü algı değerlendirmesi. *Bartın Orman Fakültesi Dergisi*, 21(3),655-664. https://doi.org/10.24011/barofd.595758

Ender Altay, E., Şenay, D. & Eyüpoğlu, Z. (2021). Outdoor ındicators for the healthy development of children. *Child Indicators Research*, 14, 2517-2545. https://doi.org/10.1007/s12187-021-09855-8

Erdönmez, E. A. & Çelik, F. (2016). Kentsel mekânda kamusal alan ilişkileri publıc space relatıons ın the urban. Yıldız Teknik Üniversitesi Mimarlık Fakültesi Mimarlık Bölümü Yıldız-Beşiktaş / İstanbul.

Erdönmez, İ.M.Ö. (2007). İlköğretim okul bahçelerinde peyzaj tasarım normları. *İstanbul Orman Fakültesi Dergisi*, 1, B, (57): 108-120. https://doi.org/10.17099/jffiu.38516

Ergül, E., Baydık, C. & Demir, S. (2013). Opinions of in-service and pre-service special education teachers on the competencies of the undergraduate special education programs. *Educational Sciences: Theory and Practice*, 13(1):518-522

Gehl, J. (1971). *Life between buildings: Using public space*. Washington, DC: Island Press.

Günal, B. (2006). İnsan-mekân iletişim modeli bağlamında konutta psiko-sosyal kalitenin irdelenmesi. Doktora Tezi, İstanbul Teknik Üniversitesi Fen Bilimleri Enstitüsü, İstanbul.

Hançer, G. (2019). Toplu konut alanlarında kentsel mekân kalitesinin

değerlendirilmesi; Gaziantep örneği, Yüksek Lisans Tezi, Hasan Kalyoncu Üniversitesi, Fen Bilimler Enstitüsü, Gaziantep.

Hooke, J. (2000). *Spatial variation in channel morphology and sediment dynamics: Gila River*, Safford Valley, Arizona. Iahs Publication.

Jafarzadeh, H. (2014). Kent İçi Anayolların Görsel Değerlendirmesinde Matematiksel Bir Yaklaşım: Adana Atatürk Bulvarı Örneği. Yüksek Lisans Tezi, Çukurova Üniversitesi Fen Bilimleri Esntitüsü. Adana.

Jarvis, R.K. (1980). Urban environments as visual art or as social settings? A review. *Town Planning Review* 51 (1): 50–66. DOI:10.3828/TPR.51.1.F3714335KU0X98R2

Karaçor, E.K., Yüksel, K.U.& Şenik, B. (2021). Modernity Vs. Postmodernity: Assessing the design quality of urban parks by Ahp. *Anadolu Unıversity Journal of Art & Design*. 11(1): 63-72. https://doi.org/10.20488/sanattasarim.971660

Kuter, N., & Çakmak, M. (2017). Kamusal dış mekânlarda engelliler için tasarım: Ankara, Seğmenler Parkı örneği. *Anadolu Orman Araştırmaları Dergis*i, 3(2), 93-110.

Lynch, K. (1960). *The image of the city*.The MIT Press, Cambridge, Massachusetts, 194p.

Oktay, D. (2007). Kentsel kimlik ve canlılık bağlamında meydanlar: Kuzey Kıbrıs'ta bir meydana bakış. Doğu Akdeniz Üniversitesi, *Mimarlık*. 334, Mart-Nisan 2007.

Özer, M.N. & Ayten, M. (2005). Tarihsel süreç içerisinde meydanlar ve gelişimi. Gazi Üniversitesi Fen Bilimleri Enstitüsü, Basılmamış Yüksek Lisans Kentsel Doku Değerlendirme Dersi Ödevi, Ankara.

ÖZİ, (2010). Yerel yönetimler için ulaşılabilirlik temel bilgiler teknik el kitabı, H. Kaplan, Ü. Yüksel, A.B. Gültekin, C. Güngör, N. Karasu, M. Çavuş (Eds), T.C. Başbakanlık Özürlüler İdaresi Başkanlığı Yayınları, General Publication No:49, ISBN: 978-975-19-4679-9, Ankara, pp. 1-139.

Özkan, D., Alpak, E. M. & Düzenli, T. (2016). Tasarım eğitiminde yaratıcılığın geliştirilmesi: Peyzaj mimarlığı çevre tasarımı stüdyo çalışması. *IJASOS-International E-Jorunal of Advances in Social Sciences*, 2(4), 136-143. https://doi.org/10.18769/ijasos.96154

Pouya, S. & Bayındır, E., (2021). Özel eğitim okul bahçelerinin değerlendirilmesi. *Akademik Ziraat Dergisi*, 10(1): 153-164. https://doi.org/10.29278/azd.782965

Pouya, S., Akyol Şatıroğlu, E. & Demirel, Ö. (2016). Özel eğitim okul bahçesindeki alan kullanımlarının engelliler için uygunluğunun irdelenmesi, *Uluslararası Hakemli Tasarım Mimarlık Dergisi*, 9 ; 60-72. Doi: 10.17365/TMD.2016922564

Semerci, F. (2008). Kentsel tasarım gereklilikleri açısından Beyazıt Meydanı örneği. Yüksek Lisans Tezi. Yıldız Teknik Üniversitesi Fen Bilimleri Enstitüsü, İstanbul, Türkiye.

Smardon, R.C. (1979). *Prototype visual impact assessment Manual*, School of Landscape Architecture. University of New York: New York.

Song, G. & Yan, C.Y. (2013). The qualitative evaluation of lighting quality in urban square lighting. Proceedings Paper. Proceedings of The Cie Centenary Conference Towards A New Century Of Light. Paris, France.

Sternberg, E. (2000). An Integrative theory of urban design. *Journal of the American Planning Association* 66 (3): 265–278. DOI: 10.1080/01944360008976106

Strumse, E. (1994). Perceptiual dimensions in the visual preferences for Agrarian landscapes in Western Norway. *Journal of Environmental Psychology*, 14. 281-292. https://doi.org/10.1016/S0272-4944(05)80219-1.

Şahin, G. (2018). Farklılaşan sosyo-ekonomik yapının meydanlardaki kullanıcı tercihi ve meydan tasarımına etkisinin değerlendirilmesine yönelik yöntem önerisi: Bursa örneği. Yüksek Lisans Tezi, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul.

Şahin, S. (2015). Kentte meydanın rolü: Ankara -Kızılay Meydanı. Yüksek Lisans Tezi, Atılım Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.

Şensoy, N. (2017). Sensory garden design for individuals with autism spectrum disorder. *Inonu University Journal of Arts and Design*, 7(15), 115-128. https://doi.org/10.16950/inustd.286842

Taşçı, H. (2012). Kent meydanı ile kent kimliği ilişkisi Üsküdar Meydanı örneği. Doktora Tezi T.C. Marmara Üniversitesi Sosyal Bilimler Enstitüsü Kamu Yönetimi Anabilim Dalı Mahalli İdareler Ve Yerinden Yönetim Bilim Dalı, İstanbul.

Temelli, M. (2008). Çukurova Üniversitesi Yerleşkesi örneğinde görsel etki değerlendirme çalışmalarına metodolojik bir yaklaşım. Yüksek Lisans Tezi, Çukurova Üniversitesi Fen Bilimleri Enstitüsü. Adana.

Thorp, L. & Townsend, C. (2001). Agricultural education in an elementary school: An Ethnographic study of a school garden. 28th Annual National Agricultural Education Research Conference, December 12, 2001 – Page 350

Tibbalds, F. (2000). *Making people friendly towns: Improving the Public Environment in Towns and Cities*. London: Spon Press

URL-1 https://niluferisokulu.meb.k12.tr/Erişim tarihi: 23.09.2023

Uzgören, G. & Erdönmez E. (2017). A Comparative study on the relationship between the quality of space and urban activities in the public open spaces. *Megaron*. 12(1):41-56.doi: 10.5505/megaron.2016.42650

Van Mansvelt, J.D. & Kuiper, J. (1999). Criteria for the humanity realm: psychology and physiognomy and cultural heritage. In J. D. van Mansvelt, & M. J. van der Lubbe (Eds.), Checklist for Sustainable Landscape Management (116-134).

Watson, G.B. & Bentley, I. (2007). Identity by design. Elsevier

Weinstoerffer, J. & Girardin, P. (2000). Assessment of the contribution of land use pattern and intensity to landscape quality: use of a landscape indicator. *Ecological Modelling*, 130: (1-3). 95-109. https://doi.org/10.1016/S0304-3800(00)00209-X

Whyte, W.H. (1980). The Social life of small urban spaces. New York: Project for Public Spaces.