Available online www.jsaer.com

***Journal of Scientific and Engineering Research*, 2018, 5(10):1-5**

Research Article

ISSN: 2394-2630
CODEN(USA): JSERBR

NiğdeÖmerHalisdemir University Campus Area Landscape Design and Application

Gülden Sandal Erzurumlu

Niğde Ömer Halisdemir University, Faculty of Architecture, Department of Landscape Architecture, Niğde, Turkey

Abstract In NigdeÖmerHalisdemir University, which is constantly developing and provides education to many students, the open green areas are decreasing day by day. In this regard, increasing the amount of green space on campus is an important need for students and university employees. In the campus area, roads, faculties and café environments are important potential areas to create green spaces. The campus has a green area of 151.000 m^2. In the study that have been carried out in 2013-2015, 8 different types of trees, 11 different species and varieties of shrubs and other herbaceous plants were planted in the central laboratory area in 100x20m^2 area. With this study, it is aimed to become an exemplary campus with the open green areas of the NiğdeÖmerHalisdemir University campus area, contributing to campus aesthetics and identity, offering its users qualified, livable and attractive environments.

Keywords Niğde, NiğdeÖmerHalisdemir University, Campus, Landscape design, Landscape

Introduction

Campus is a multifunctional educational area that includes university educational buildings, student dormitories, housing units belonging to instructors, social facilities, streets connecting the units, walkways, green areas, inner courtyards, plazas and squares. The campuses are university cities established to provide a ground for social exchange by bringing together different people and their thoughts within certain limits in order to provide an intellectual environment [1].

The laboratory located in the central campus is one of the most visited places in the campus area, especially because it is close to the shopping mall which the students use intensively. Academic staff, administrative staff, technical staff, students, and sometimes local people, as well as different user groups, especially students, make up the majority of the users.

It is necessary to create spaces where the users in the campus can interact with each other in order to increase their physical, psychological and social sharing. In this study, the design process, project and application stages of the Central Laboratory Landscape Design Project that has been prepared according to the request of the University administration are explained.

Materials and Methods

In the central campus area of NiğdeÖmerHalisdemir University; there are 10 faculties, including Arts and Science, Education, Engineering, Architecture, Economics and Administrative Sciences, Agricultural Sciences and Technologies, Communication, Islamic Sciences, Medicine and Fine Arts, School of Foreign Languages continues their academic activities. Graduate education is carried out in 4 institutes; Science, Social, Education and Health Institutes. There are 28.050 students in the University, which could use the campus area. The central laboratory employs 19 people, including approximately 10 graduate students. The main material of the study is the Central Laboratory located in NiğdeÖmerHalisdemir University Campus (Figure 1).

Figure 1: Study Area

In the vicinity of the laboratory are student dormitories, the Faculty of Architecture, the Faculty of Medicine and the shopping mall. The landscape design project for the area was designed in 2013-2014 and completed in 2014 (Figure 2,3).

Figure 2: Study area before application

Figure 3: After application

During the study;

- Determining the objectives and problems,
- Examination of the laboratory area and its environment
- Creation of alternative landscape design projects
- Implementation of the suitable project
- Selecting the material to be used on the floor
- processes were followed.

The evaluation of landscape design stages in the research area constitutes the method of the study.

Research Findings

In the landscape design of the central laboratory located on an area of 3000 m2, the concept of being a space that can meet the needs of the social and psychological needs of its users has been adopted and the design processes have been discussed. Due to the fact that the landscape design area is on the road route where it is intensively used, it has been paid attention to the design of the campus identity as well as contributing to the amount of green areas. Aim of the landscape design of the study is to enable the users to perform social, cultural, artistic and recreational activities within the campus. Within this framework, the current structure of the

project area and its relationship with the environment has been analyzed, and in this direction, needs have been determined and design alternatives have been produced. The most suitable one of the design alternatives is prepared as an application project.

Structural Design

In landscape design, considering the user requirements and approximate number of users; The areas where the users can socialize, where they can spend time, where they can park their vehicles and where they walk has been designed.

Walking Trails

In the landscape design, it has been ensured that the circulations are comfortable, readable and perceptible in order to ensure the active circulation of the users within the area and reach the point they want to reach as soon as possible. Functional characteristics of the plants used as boundary element have been considered.

Figure 4: Study area walking trail

Parking Lot

The area in front of the laboratory building in the campus was used as the parking lot. A total of 22 car parking spaces have been designed, 4 of which are reserved for disabled people.

Recreation Areas

Recreation areas have been designed in the landscape design area. The areas around the faculties are designed as recreation areas for the students. In addition, the walkways around them are designed as a recreation area with shade effect of trees. Grass fields are widely used for students to spend more time on them (Figure 5).

Figure 5: Grass fields

Plant Design

The ecological, aesthetic and functional properties of the plants have been taken into consideration during the design process. The color-texture-scale-line-form characteristics of the plants have been utilized in supporting/strengthening the structural design and defining the spaces [1]. In plant selection, attention has been

paid to the selection of species suitable and resistant to region's climatic conditions. Within the scope of the plantation work carried out in the application area, 8 species of 8 trees and trees (Table 1) and11 genus 12 different types of herbaceous-woody shrubs, grass species consisting of 3 genus and 4 species were used (Table 2, 3). In order to improve the soil structure in all sections of the study area, vegetative soil supplements has been made at different heights, leveling work has been carried out, thus suitable vegetative environments has been prepared.

Table 1: Trees and shrubs used in study area

		Habitus Features		
Plants	**Avg. height (m)**	**Form**	**Color**	**Aesthetical and Functional Effect**
Aesculus hippocastanum	10-20	Round	Green-White	Form, flower and shade effect
Catalpa bignonioides	10-15	Round	Green-White	Form and flower effect
Lagerstroemia indica	6-8		Green	Flower effect
Morusnigra "Pendula"	6-8	Hanging	Green	Form
Picea pungens	10-15	Pyramid	Green	Blue form
Prunus serrulata	4-5	Round	Red	Color effect
Robinia pseudoacacia	20-30	Round	Green	Flower effect
Tilia tomentosa	20-30	Round	Green	Form and shade effect

Table 2: Shrubs used in study area

	Dendrological Features			
Plants	**Form**	**Color**	**Texture**	**Size**
Abelia x grandiflora		x		
Berberis thunbergii 'Atropurpurea Nana	x	x		
Buxus sempervirens 'Rotundifolia				x
Euonymus japonica * **	x	x	x	
Euonymus japonica 'Aurea' *	x	x	x	
Juniperus horizontalis	x	x	x	x
Ligustrum vulgare	x		x	x
Mahonia aquifolium		x	x	
Photinia sp.	x	x	x	
Pittosporum tobira "Nana"	x	x	x	
Pyracantha coccinea		x	x	
Rosa sp.	x	x		

Table 3: Grass species used in study area

Plants	**Ratio**
Lolium perenne	40
Festuca rubra rubra	30
Festuca rubra commutata	15
Poa pratensis	15

In the planting stage, rotated repeat principle is adopted. Balance in these circulations is ensured by using evergreen *Ligustrum japonica, Berberis thunbergii, Photinia sp. Rosa sp.*, in the other circulations by using *Picea sp.*, and by using Juniperus sp. in the grass fields.

Materials and Equipment

Keystone material is used in the landscape design area (Figure 6). It has been ensured that both fixed and moving seating units are compatible with the environment and the flooring materials. It is preferred that selected materials are resistant to outdoor conditions.

Figure 6: Floor cover used in the study area

4. Results

In addition to the basic duties of universities to contribute to science and society by doing education and research, they also have the responsibility of contributing to the aesthetics of the city and providing modern, qualified environments to their students, employees and other users. The university campuses are not only comprised of buildings but also have open green spaces and aesthetic and functional spaces that can be an example for the city. Therefore, university campus planning is an issue that needs to be carefully considered as much as the other components of the city [2].

Universities are not only scientific educational spaces, but also social and cultural educational areas that contribute to the development of students. Green spaces which contribute to the positive development of people are more important in university environments.

The floorstep seating application of the project, which is designed for the environment of the central laboratory, is made within the facilities of the ÖmerHalisdemir University and the planting application is done under the control of Landscape Architect.

It is aimed to reinforce these qualifications and to meet the potential user needs by creating the right places around this laboratory. In this direction, the educational, cultural, artistic and social values of the users are added to the campus.

This study, which is carried out in the landscape design of the campus, will serve as an example for other landscape designs to be made in terms of both functional and aesthetic. The findings of this evaluation may also be a guide in the subsequent campus designs.

References

[1]. Karaşah, B., Sarı, D., Yaman, Y. 2016. BirYerleşkePeyzajTasarımı: ArtvinÇoruh Üniversitesi ŞehirYerleşkesi. ErciyesÜniversitesi Fen BilimleriEnstitüsüDergisiCilt 32, Sayı3, Sayfa:1-13. 2016

[2]. Yeşil, M. 2017. OrduÜniversitesiCumhuriyetYerleşkesiBitkiselTasarımıveUygulaması. IğdırÜni. Fen BilimleriEnst. Der. 7(2): 279-293, 2017