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The Design Process of Vakfikebir River Fol Park

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Abstract: As the communication between quality outdoor spaces and their residents emerged as a subject of scientific study, landscape architecture has come to mean much more than the embellishment of the environment. Its importance has grown further with the increasing awareness of the rapidly depleting natural resources. Therefore, many official and private legal and natural entities started to view landscaping projects as a matter of prestige, self-expression and branding. Vakfikebir, a city located on the northeast coast of Turkey and one of the largest cities of Trabzon, is one of the cities putting forth efforts in pursuit of this goal. In search for creating opportunities for its residents to spend quality time near River Fol, a river flowing through the city, a landscaping project was commenced in response to the request of the Municipality of Vakfikebir. The most pronounced request of the Municipality was to repurpose this unused area for the use of the residents and create a distinctive silhouette that will have an international eminence. The project was prepared by Dr. Emrah YALÇINALP through the instrument of the Circulating Capital Enterprise of Karadeniz Technical University. The 45-day preliminary study was started with field analysis and interviews to determine the user profile; then, in light of the data obtained from the preliminary study, the project was first conceptually laid out and, then, delivered to the relevant municipal authorities as an application project. During the four-month sitework, the site was weekly visited and supervised to ensure the construction process is in keeping with the project. The project aims to contribute to the international renown of the city, which has been populated since 2017, by creating an authentic silhouette.

Keywords: Landscape Design, Planning, River Park

1. Introduction

Landscape architecture involves creating projects for the planning, design, conservation and management of natural and cultural components and environments by complying with ecological, economic, aesthetic and functional criteria and by regarding the balance between conservation and use [1, 2].

As an ever changing dynamic phenomenon, environment is shaped around daily needs and natural and artificial elements. It comprises abiotic factors such as climate, soil, waters and natural structures and biotic factors such as humans, animals and plants and gains different qualities, descriptions and characters depending on the resources and properties it possesses [3, 4]. Humanity has constantly worked towards embellishing and improving its environment and make its environment more habitable. In line with this philosophy, landscape architecture studies aim to create environments that are more habitable for humans [5]. The livability and efficiency of spaces is achieved through the organization during the design process and communication and consensus-building between different units [6].

Although being a part of nature and indispensability of nature in every sense, humanity has continuously modified nature to the disadvantage of humans through intense and structural urbanization. In addition to the creation of compatible environments with nature, the restoration of the disturbed natural balance constitutes the basis of the landscape design studies [7, 8]. One of the fast-changing aspects of design and planning is the process involving the creation and development of the design [9, 10].

Cities are open systems that are dependent on outside resources and comprise a mosaic of single or multiple ecosystems. Economic, social and cultural activities contribute to the formation and shaping of the system and identity of a city [11-15]. On the other hand, activities such

as population growth and urbanization result in diminishing natural and cultural urban and peri-urban landscapes [16].

Various conceptions and criteria such as the abatement of noise, pollution and housing pressure caused by high-rise buildings and the design of urban areas, which is accomplished by considering the demands from their users, are attached to the urban life quality brought to the cities by landscape design [17-20]. Urban spaces are where urbanites and other users share, pass on and re-learn their cultural richness. Furthermore, within the context of urban identification, these spaces provide a medium for people to experience urban life through their cultural identities, personal development and interactions with other people [21]. The design of outdoor spaces varies depending on numerous elements such as factors, functions, space quality and needs. Spaces may necessitate variations in their designs depending on the needs they are required to fulfill [4, 22, 23].

The organization of the space in which a person lives determines the comfort of the person to the extent of its both passive and active support of the physical and social actions of the person. A space not only represents the physical environment but also is a phenomenon that a person experience, feel and connect with. Thus, regardless of their dimensions, creating spaces that are physically, culturally and socially perceivable and livable for the people for whom the spaces provide a living environment is the main goal of the design and planning studies [24, 25].

In the study, the landscape design of the immediate vicinity of River Fol in Vakfikebir County of Trabzon City was carried out and information from before and after the implementation was evaluated. Within this scope, the preliminary study for the study area was shared with the Municipality of Vakfikebir and Civil Works Departments and then, the approved preliminary study was laid out in detail and the structural design was finalized. After the completion of these processes, the plantation project, simulation studies and visuals, application project, static projects and electricity project were prepared. After the detailing and finalization of the project, the bill of quantities was prepared and delivered to the Municipality of Vakfikebir; then, the project was put out to tender by the Municipality. The project was implemented in 2016 and put into service in 2017.

2. Material and Method

2.1. Study Area

The study area comprises the 3286-m^2 area near River Fol, which is located in Vakfikebir County of Trabzon City, Turkey (Figure 1). The area is on a circulation line between Yenicami, a recreational area regarded as the center of the social life of the county, and the bus terminal. One of the most important issues detected in the area is its users' reluctance to spend time in the area, albeit the busy circulation between the recreational area and bus terminal.

Figure 1. *Study Area.*

The time spent by the users exceeds 15 minutes only on Mondays when the marketplace located in the southwest of the area is open. The examinations and interviews carried out during the project preparation stage revealed that the most pronounced demand of the users was climatic comfort, especially the demand for protection from rain. In addition, the interviewees stated that the current railings were extremely unsafe to enjoy the scenery of River Fol and if possible, they preferred to enjoy the landscape directly on the top elevation of the river. Furthermore, based on the demands from the users, an in-gazebo closed-circuit audio system, a video surveillance system and lighted water shows from the walkway to the river were put on the agenda.

The city is within the A8 of the grid system created by Davis, 1965 and Davis, 1985. The annual mean rainfall is about 760 mm and the mean temperature is about 14.6°C. The monthly mean temperature ranges from 7.3°C in January and from 13 to 23.1°C in August [26].

2.2. Method

The layout sheets, topographic maps, 1/1000-scale development plants, photographs of the site and interviews with the users of the area and experts were used as auxiliary materials. For project drawing, simulation and rendering, Autocad 2016, Archicad 19, Lumion 6.0 and Adobe Photoshop CC 2015 were used.

The preparation of the landscape design of the area was carried out by following the six-stage method proposed by Atabeyoğlu [4], Atabeyoğlu and Bulut [23], Yılmaz and Yılmaz [27], Korkut [28], Bartlett et al. [29], Çelikyay [30], Turgut [31], Kiper and Karakaya [32], Sağlık et al. [33] and Şişman et al. [34], in addition to a seventh stage involving the preparation of the bill of quantities for the tendering stage (Figure 2).

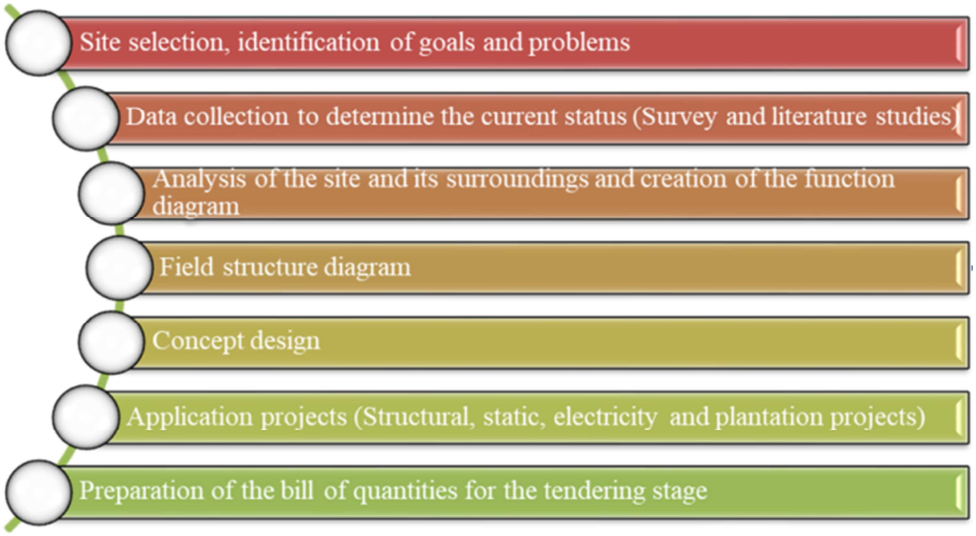

Figure 2. *Flow diagram of the method.*

3. Results

For the preparation of the landscape project of River Fol in Vakfikebir County of Trabzon, Turkey, the above-mentioned stages were implemented in the following order:

3.1. Site Selection, Identification of Goals and Problems

Expert opinions and views of the users were gathered to determine the goal of the project and identify the issues that necessitated a new design for the area and ideas were exchanged on the designs. The project aims to the redesign the immediate vicinity of River Fol to allow the residents of the city to participate in recreational activities in the area and accordingly increase the carrying capacity of the area. The non-integrated structure of the immediate vicinity of River Fol, the high number of neglected spaces that impair the aesthetic quality, the wearing of the structural materials (curbs, floor coverings, gutters, current railings), the lack of seating and resting areas in the area, which is heavily used as a transition line, and the insufficiency of the reinforcement elements were the leading problems determined in the area.

Data collection to determine the current status (Survey and literature studies)

Figure 3. *Study area before the project.*

Figure 4. *Preparation stage of the project.*

In this stage, the current state of the area was examined and photographed, interviews with the users of the area were carried out and ideas were exchanged on actions to be taken (Figure 3, 4). The thereby-collected information was transferred to the layout sheet and the survey sheet was prepared.

3.2. Analysis of the Site and Its Surroundings and Creation of the Function Diagram

At this stage of the project, the effects of environmental and cultural factors on the use of the area were observed and turned into sheets to make better decisions during the design phase. Solutions were offered for the issues identified during the observations and a list of requirements was prepared by taking the views of the users into account. The improvement of the drainage system, seating and resting areas, green areas, a different and modern floor covering and parterres to help obtain an ever-colorful site were among the problems that were included in the list of requirements and solution of which was widely demanded by the users.

The analysis of the site was performed with reference to the requirements program and the “function diagram” was created (Figure 5).

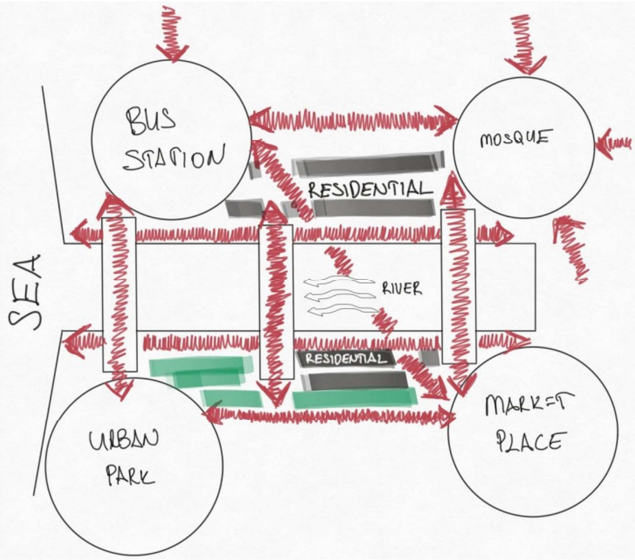

Figure 5. *Function diagram.*

3.3. Field Structure Diagram

The recreational areas determined in the function diagram, which was developed based on the demands of the users, were marked and included in the design process (Figure 6).

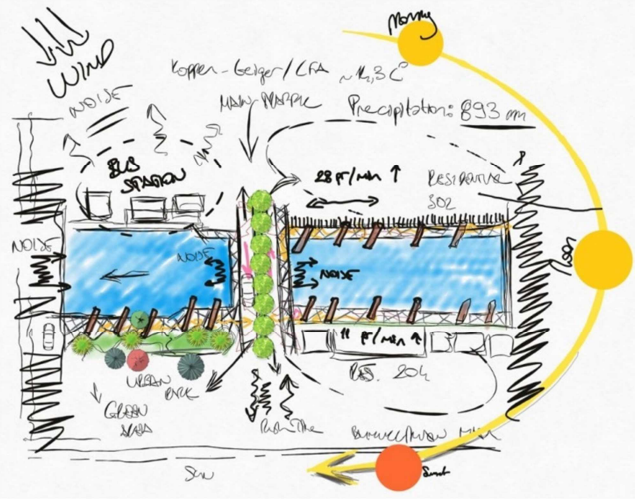

Figure 6. *Structure diagram.*

3.4. Concept Design

The areas and recreational activities determined in the field structure diagram were scaled and transferred to the concept design and the preliminary project was prepared for the design and details (Figure 7).

Considering the potential contribution of the project to the image of the area, deciding on the form of the gazebo that will be placed in the site was determined to be the most important stage of the project. This is due to the hardship in creating an effect in a site that can be represented by narrow corridors, which was believed to be manageable through the use of a repeating form. From this point of view, the designer created a gazebo in the shape of a spiral that was formed with a wooden platform rising from the ground at a vertical angle. The construction was raised using a highly complicated static project and given its final shape by covering the steel sections with wood, thus creating an extraordinarily dynamic form through the use of a traditional material and leading to an attention-grabbing result.

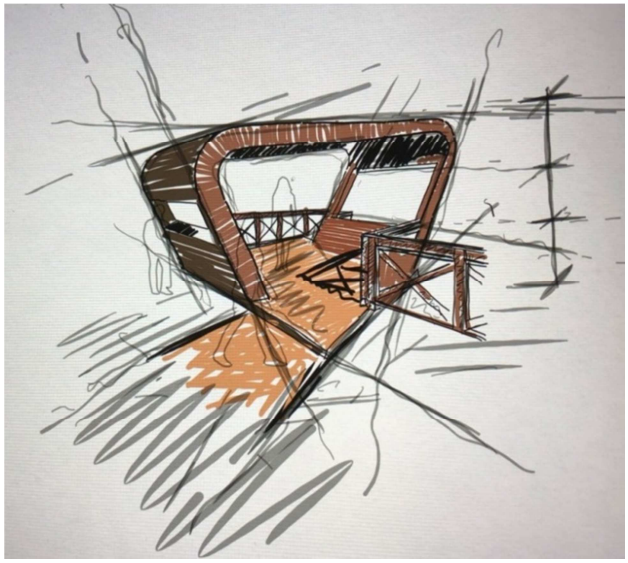

Figure 7. *Scaled drawing of the reinforcement.*

3.5. Application Project

The spaces and functions in the concept design were detailed and scaled and the scale sheets were prepared. To better determine the harmony of the project with the site and eliminate the insufficiencies, the application plan was applied to the satellite image taken from Google Earth Pro (Figure 8).

Figure 8. *Implementation of the application project to the area.*

4. Discussion

The study area is named after the river on which it is located. It is one of the main spots of the region and an attraction center that has the potential to be recreationally and socially appreciated by its users. The design concept of the project was established to turn a previously worn-out riverside area into a medium for the reuniting of people with water. Adopting a holistic approach for the area and developing an identity for the region were the main goals of the design.

4.1. Application Projects (Structural, Static, Electricity and Plantation Projects)

The stylistic origin of the design was inspired by the dynamism reflected in the daily life of the Black Sea and Vakfikebir. The zig-zag shaped floor coverings that give the design its character was inspired by the recreated sound waves of the local folk music "Siksaray Dance", in computer environment, and the dynamic-modern section of the wooden resting unit, which was planned to give an original identity to the site, was created by drawing inspiration from waves washing ashore (Figure 9, 10).

Figure 9. *Rendering of the project (Render 1).*

Figure 10. *Rendering of the project (Render 2).*

4.2. Preparation of the Bill of Quantities for the Tendering Stage

Figure 11. *Implementation stage I.*

Figure 12. *Implementation stage II.*

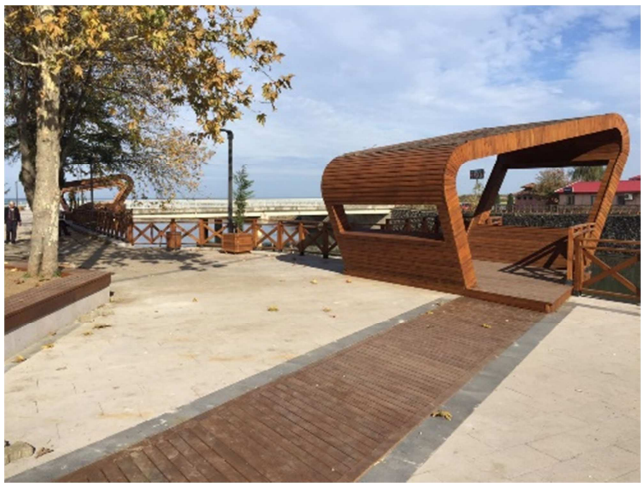

Figure 13. *Study area after the implementation I.*

Figure 14. *Study area after the implementation II.*

The project was finalized after the exchange of ideas with the experts from the Civil Works Department of the Vakfikebir Municipality and local community. The bill of quantities for the finalized project was prepared with respect to the price lists of Turkish Republic Ministry of Environment and Urban Planning and General Directorate of Highways. The project was put out to tender by the Municipality in 2017 and the implementation stage was commenced (Figure 11, 12, 13, 14).

5. Conclusion

The project site can be described as a long and narrow corridor, which, compared with other urban areas, substantially limits the capabilities of landscape architecture. The block foundations of the sewer line that pass 1 m below the site and their obstruction of the use of plant materials, the claustrophobic effect of high-rise apartments that, on average, have five floors and the municipality's demand for a distinctive and striking silhouette that will turn the city into a globally recognized brand, albeit the narrow corridor-like structure of the site, were the challenges encountered before the design of the project.

The lack of a recreational activity in the area despite the bus terminal, marketplace, beach park and Yenicami, which are close to the project site and busy with mass human activities, was determined to be the main challenge of the design. Issues such as why the area is not used for purposes other than its function as a transit area and what can be done to encourage its use are of critical importance for the project to gain value and thus, an extensive site analysis was performed prior to project preparation. The data collected with the observations and interviews made for the area after the demand for a landscape project for a recreational area near River Fol were grouped and evaluated to a obtain a more insightful design. The following groups comprise the most prominent demands of the users:

I Security; Demand for constant surveillance, demand for nighttime lighting, demand for security cabins, demand for strong boundary elements

II Climatic comfort; Availability during rainy or snowy weather, availability during windy weather, availability during cold weather, availability during hot weather

III Social comfort; Ergonomic seating units, comfortably enjoying the scenery of the river and fauna, eating and drinking, music, non-disturbance of the family-friendly environment

Considering the safety concerns of the interviewees, the following changes were made in the project: Designing a video surveillance system

I Providing a view to the inside of the gazebos through opening previously unplanned windows on the backs of the gazebos

II Elevating the lighting units to achieve a well-lit site

III Separate lighting of the interiors and outer contours of the gazebos

IV Installing a security cabin in the site

V Reinforcing the boundary elements with metal stands The city receives rainfall for the most of the year and thus, the most important issue in the use of this outdoor space during the rainfall season is undoubtedly the scarcity of spaces that provide protection from the rain. Therefore, during the design of the object that will be created in accordance with the demand from the municipality and used to obtain a silhouette through the use of a repeating pattern importance was also attached to its climatic comfort. Through the design, both an original form and a geometry that will provide comfort during rainfall and snowfall were achieved. The idea to install infrared heaters for cold weather and ventilating fans for hot weather was abandoned per the request of the management.

Due to the demand for an ergonomic seating unit, which was discussed under the heading of social comfort, a seating unit solution integrated with the designed unit was proposed and built by creating a reclining angle that is within the limits for anatomical support and forms the angle of twist of the gazebo. To allow enjoying the river view from a previously unavailable angle, the front sides of the gazebos were curved outwards, thus providing a wide view even from the bottom of the units, which were already placed above the river to allow ease of view. For the eating and drinking activities, meetings were held with the local café owners and the gazebos that are positioned on the café fronts were enlarged and food delivery from the cafes to the gazebos was arranged after receiving the permission of the Municipality. The demand for the preservation of a family-friendly environment is due to the dominantly conservative ideals of the local community and providing an in-unit continuity is thought to serve for this purpose. For the demand for music, a closed-circuit audio system that can be switched off when desired and volume of which is adjustable within the gazebos was designed.

The investigation of the site after the implementation of the project showed that, on the contrary to its old function as merely a circulation area, the units have attracted intensive attention from the users and the users started to spend more time in the site and engage in recreational activities even during the evening hours, which was previously a rare occurrence for the majority of the city. The site became an enjoyable shelter area from the heavy showers of rain. The interviews with the café owners revealed that there were new additions to their customer portfolios and their satisfaction with the new arrangement was culminated in an agreement with the municipality to cover the cost of the annual maintenance of the wooden units, thus relieving the municipality of the maintenance cost. Thereby, the first step towards an economically sustainable management model was taken. Adopting similar approaches to the applications in other areas will both increase the satisfaction of the users and reduce the maintenance and operating expenses in terms of labor and cost by creating a sense of belonging.

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