



An example for landscape design in public buildings: Duzce university rectorship building

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Abstract The buildings in which state and city affairs are carried out, people come and go freely are called public buildings. Universities also hosting public spaces and public structures in this sense. Both management unit and protocol and bureaucracy centre and at the same time since almost it is a reception area entrance and surrounding area are important as main building. So the rector building is one of the remarkable structure of universities. The aim of this study is to provide an open and green area to the university campuses which have positive contribution to urban open and green space systems. For this reason in this study landscape design process of Duzce University Rector of the building's entrance and reception area are examined, how it followed a path, how fiction design is shaped over during putting forward landscape design of such an important structure is disclosed. In the scope of study field analysis and data collecting, preparation of program requirements, creation of the function diagram, preparation of application projects and the implementation of project sections was synthesized.

Keywords Public space, public building, landscape, design, application.

Introduction

Person is an active, social being who affects and changes the environment as much as he is influenced by the environment he lives in. When the cities inhabited by the human are considered together with the environment the phenomenon of urban design arises. The understanding of the relationship between the people and their environment is the main element of urban design [1]. The public space is one of the components that directs and gives meaning to urban design. The term of public in architecture can be used both for the structures and also for the functions in the urban areas. Parks, squares, streets are the open public spaces used by all the urban residents for all the time [2]. In another definition the public space is defined as the space which is open for the public [3]. The public buildings can be defined as constructions such as governorate and municipality where the administrative works of the city, state and the town are carried out, where the public servants do their works and which can be easily accessed by the people. In this sense, the universities are also included within the public buildings and public spaces.

The residential areas of the universities are called "campus". Campuses are areas where the educational activities are carried out, while at the same time there are also places providing opportunities for the students to improve their social and cultural developments and to benefit from the behaviour and communication skills inside the community [4].

In a study conducted by Ercevik and Onal (2001) it was mentioned that the developments of the students during the way of becoming individuals and the community are closely related to the cultural and social life areas that shape the students' life at the universities. Accordingly, during their education, the students participate or organize activities on various platforms as the requirement of the social beings. The social individuals and



groups have responsibility as a part of the society. Thus, they learn to establish rational relationship with their environment as a part of the society they live in. They grow up as they are ready to have a say within the community and to socialize with the other individuals constituting this community [5].

In the study conducted by Kara and Kucukerbas (2001) it was mentioned that the intra-community communication was weakened and solid spatial organizations abstracted from human values were created as the result of the elimination of the individual relations by defining the opposite of the above mentioned situation [6]. It is possible to provide safely and high quality life for both the students and the instructors by designing the open and green spaces within the university campuses as parks. However, the campuses should be designed to meet the recreational functions as well as the educational and sheltering functions. The social and cultural facilities, sport areas, open and green area arrangements and the transport system that link these areas should be considered as the items of the recreational function [7].

The functions of the open and green areas within the university campuses are listed in the following way:

- Provides the integrity between the buildings and the campus,
- Provides the space required for the circulation system,
- Provides opportunity for the outdoor arrangements to meet the recreational demands on the campus,
- Allows the establishment of a relationship between the people and the environment,
- Creates reserve areas to keep the physical development under control on the campus,
- Contributes aesthetically to the campus [8].

The open and green elements that should be included within the university campuses can be categorized in the following way:

- The surrounding boundaries and the entrances of the campus
- Active outdoor recreation areas
- Passive outdoor recreation areas
- Transport and pedestrian circulation system
- Plastic objects (fountain, statue, and monument)
- Junctions
- Outdoor furniture (pergola, bench, arbour)
- Lightening
- Planting
- Special applications [7].

In a study conducted by Demir et al. (2015) and Yerli (2012) it was found that the amount of open and green areas in Duzce was insufficient [9, 20]. The purpose of the study is to provide an open and green area to the university campuses which can contribute positively to the urban open and green space systems. In this respect, contributions will be made to the urban open and green space system. Besides it is the ability to explain how the mission to create liveable spaces which is the mission of the professions whose foundations are based on planning and design disciplines including the architecture and landscape architecture which are responsible for the creation of the space organizations between the construction mass and these masses, finds a body from an idea that exists only on paper through the design and implementation process. Also, it was aimed to contribute with an example to the education process of the chain of stages extending from the sketch drawings examined in the study to the application stage especially the academic units based on the design discipline and education.

For this purpose, the landscape design process of the entrance and the welcoming area of the Duzce University Rector's Office was examined and it was demonstrated that what kind of path was followed while revealing the landscape design work of such an important structure and how the design was shaped through a fiction. Within the scope of the study the following sections were synthesized; field analysis, data collection, the preparation of the requirement program, and preparation of the function diagram, preparation of the application project and the application of the program.

Here are few of the researches that contributed to the literature with similar aims as our study; in the study examining the design prepared by Atabeyoglu (2014) for the Ordu University Social Sciences Collage the pre and post-design information was evaluated then it was followed by the preparation of planting project, various detail designs, visualization works and application lightening projects. The project proposal was carried out by



preparing the reconnaissance and quantities given by the Construction Department along with the final details related to the project [10].

In another study, the landscape and recreation project of the central campus in Zonguldak was prepared. Within the study; the principals considered while conceptualizing the project of the required areas of the central campus were examined by considering the recreation and landscape planning principles [11].

In a similar study conducted on public buildings in Tekirdag, the landscape design process of Ceremony and Park Area of the Tekirdag Governorship was examined. In this study, the landscape design stages of this project were explained respectively and it was presented by comparing the pre and post –implementation states of both the structural and herbal implementation project [12].

In the study called the Landscape Design of Canakkale Governorate Office which was made by Saglik and Keltik (2015) the stages of the design were carried out similarly to our study and these stages including the selection of the area, the determination of the problems, stain diagram and the application project were discussed [13].

Materials and Methods

Duzce University which separated from the Abant Izzet Baysal University on 17 March 2006 along with its faculties and collages was founded on an area of around 180 hectares. The basic material of the study is the area of 4130 m² which is the entrance area of Duzce University Rectorate Building. The construction design of the Rectorate buildings resembles the letter “U” with its wings opened towards the sides. The study area has the function of a courtyard/ inner garden which is located in the middle of the U-shaped building and welcomes the arriving people. In this study, the site plan of the Duzce University Campus, Google Earth images and the photographs taken from the area were used as materials and the Autodesk AutoCAD and the Adobe Photoshop programs were used during the various stages of the study to create the related images. The study area and its location within the university campus are given in Figure 1.



Figure 1: The study area and its location within the university campus

The method of this study is constituted by the design process that can be defined as all the components that make up the product and the parameters that create them within the efforts made in order to reveal a product and its results. In this sense, obtaining the data related to the study area can be evaluated as the first step of this method. At this stage, topography and the climate are considered as the main determinant.



The second step of this method includes the regarding distance analysis and investigation of the study area's current situation and the other field uses of the campus. At the next stage, the requirement list was created, so it was decided which uses will be brought to the study area. Starting from the evaluation of the collected data and analyses and the created requirements list, sketch studies including different designs were carried out after making the function diagram showing the relation of the spatial uses including the general uses such as circulation and green spaces. At the next stage, the usage was detailed by selecting the sketches which are most appropriate according to the requirements of the area. This stage was followed by material preferences and plant design studies.

It was observed that the methods used when examining studies on ideas and application projects have similar contents such as obtaining the current data regarding the area explained by the project processes, the analysis of this data and the determination of the problems, the determination of the requirement program, the development of the idea, stain plain, and drawing the preliminary and final master plans along with the application project and its details [10-11, 12, 14-16].

Results and Discussion

The Duzce University Rectorate Building is located at one of the highest points of the campus and the usage areas in the surrounding can be easily seen from there. The rectorate building is being used continuously by the academic and administrative staff and by the students especially for protocol. Therefore, it was thought that the entry of this building should be a space that can strengthen the prestige of the building, meet the employees and the quests and at the same time it can also meet the recreational needs of these people. Moreover, the study area is also important since it is a part of the open and green space system within the campus. The visual which represents the relationship of the study area with the other usage areas in the campus is given in Figure 2. According to this, in the north of the study area there is a recreation forest, in the south and south-west there are the education units, while in the east and south-east side there are reserve areas for the development of the campus. In addition to these, there are a social activity center and a sport complex in the south, a health unit (faculty of medication) in the west and the student dormitory in the south- east.

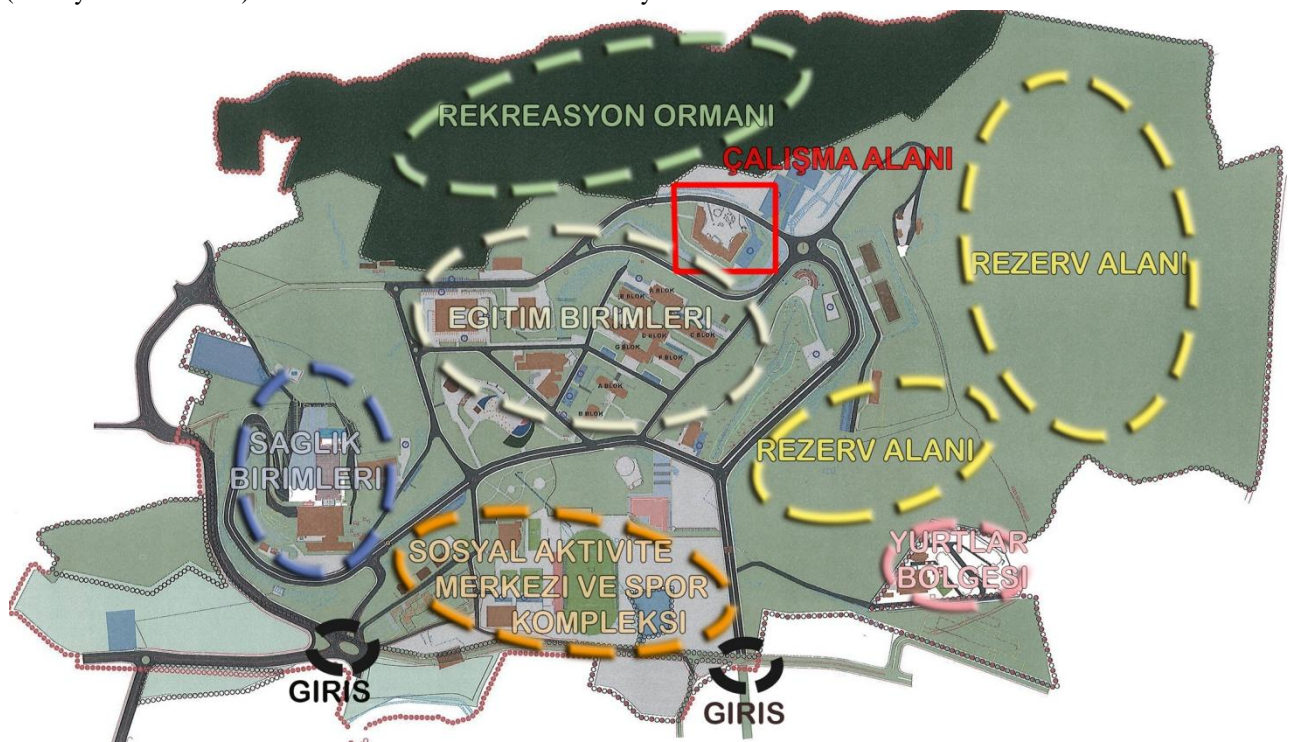


Figure 2: The study area and the other usage areas within the campus



Another factor that affects the design of the study area is the distance criterion. The distance between the study area and the academic units, health unit, sport areas and the student dormitory located within the campus are given in Table 1.

Table 1: Distances

Units	Walking Distance (min)	Distance (m)
Faculty of Technology	4	270
Faculty of Science and Literature	4	300
Faculty of Engineering	5	350
Social Facilities	5	400
Library	5	400
School of Foreign Languages	5	400
Vocational School of Health Services	7	500
Faculty of Forestry	7	500
School of Health	7	500
Common Life and Ceremony Area	10	750
Sport Complex	15	1100
Entries	17	1300
Hospital of the Medical Faculty	20	1700

According to Table 1 the locations which are the nearest to the study area are the Faculty of Science and the Faculty of technology, they can be reached in 4 minutes walking distance, while the location which is the farthest is the Hospital of the Medical Faculty which can be reached in 20 minutes walking distance. The walking distance between the two points where the campus entrance is made and the study area is approximately 17 minutes. Accordingly, it seems that more than half of the usage areas in the campus are within a 10-minute walk from the study area. This data shows that the students and the staff members who come with any reason to the rectorate use this space instead of leaving when their works are completed; it is easy for everyone who wants use their leisure time such as the lunch break and the non-working hours to reach the area from every part of the campus.

Too many usages were not included while creating the list of requirements which was needed to decide that which functions will be included in the project. This was based on the idea that this space should have a simple but functional and aesthetic design conception. At the same time it was believed that too many usages would create chaos since the area was not too large. Starting from here, a design was developed that was neither too flashy nor too simple and was expected to be sustainable but also could express the identity of “rectorate entrance”, a design which provides opportunity for short waiting but does not allow long time recreational activities. The selected usages were the followings; pedestrian path, road and parking place for protocol vehicles, green areas, recreational areas, water surfaces and plant islands.

After making decision on the usages, a functional diagram was created which included the entries, circulation, green spaces and the other usages. This diagram was given in Figure 3. According to this, 3 entries were proved in south-north, north-west and north from the existing road in the north of the study area. The study area is a flat area but in the part of the north-eastern entrance the road level is fallen and the study area remained high. For this reason, stairs were provided for the entrance. At the same time, this staircase provides access to the car park on the eastern side of the building. The main entrance of the U-shaped building is in the southern part, but there are also entrances in the other two wings.



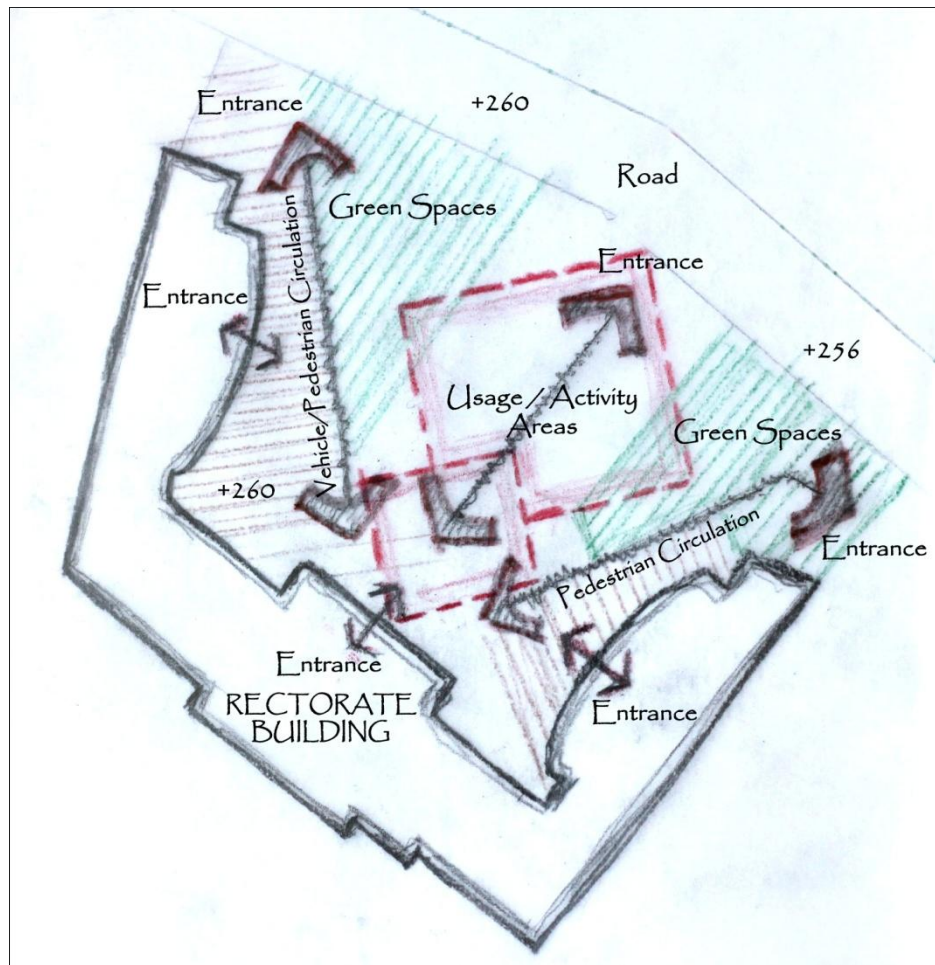


Figure 3: Functional diagram related to the usages in the study area

Accordingly, while the circulation system was being constructed, the entrances to the building were taken into account, since the main entrance was in the south care was taken to make the direction and the emphasis to this point and to plan the other usages situated between the main entrance and the existing road in the north. Vehicle circulation is allowed only from the northwest entrance. From the northern and north-eastern entrances the building can be reached only by pedestrian circulation.

Starting from the design decision mentioned above, sketch studies including different designs were made. These studies are shown in Figure 4. Among the studies included within Figure 4 and in line with the needs of the area, the most appropriate sketch was selected and the usages were detailed by evaluating criteria such as the pedestrian movements, resting places, water existence and space organization. The application project including the selected usages, pedestrian circulation, vehicle circulation and parking place for the protocol, water surfaces, resting units, lightening elements, drainage, flagpoles, the multipurpose open area providing opportunity for various outdoor activities, green areas including tree, shrub and plant parterres was scratched and the implementation of the project was carried out. The application project was given in Figure 5, while the images during and after the implementation were given in Figure 6. While detailing the design, the basic approaches given in the function diagram in Figure 3 were taken into consideration. The north-west and the north-east entrances were determined as the main circulation routes, while the center line between the north entrance and the main entrance of the rectorate building was separated as the area where the other usages situated.



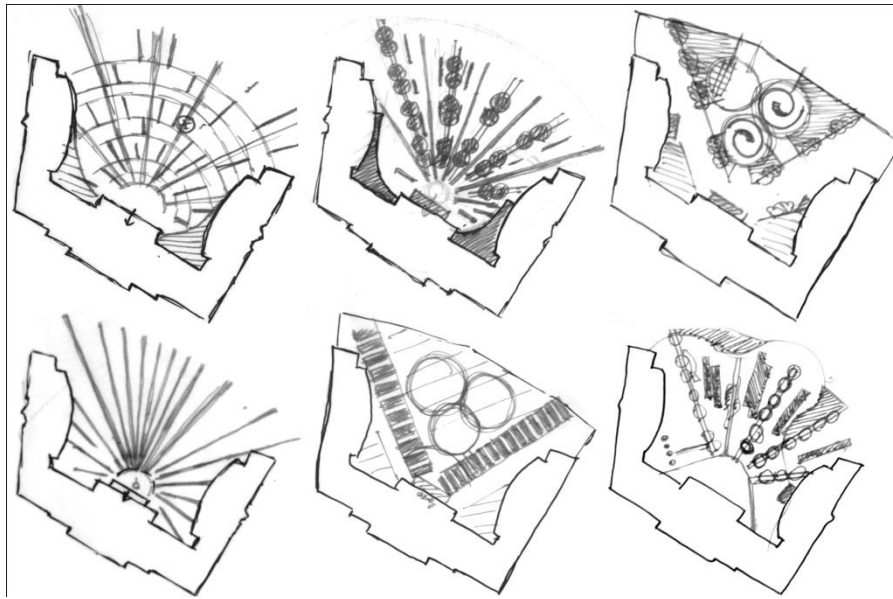


Figure 4: Different design studies



Figure 5: Application Project

In order to apply the general design plan, among the basic design principles the repetition, intermittent repetition, focal point and emphasis phenomena were carried out with the used floor and plant elements. 3

different tile elements including clinker brick (21x 10x 4 cm), cube granite (10x 10x 10 cm) and white coloured burned granite (40 x 40 x 4 cm) were chosen for the study area. The reason why these materials were preferred is that they are both decorative and also easily obtainable. At the same time, when the brick material gets wet, it gains a more decorative appearance in terms of colour and texture.



Figure 6: Images during and after the application

Brick which was the main coating element was used in the hard grounds at the north-eastern and northwest entrances while cube granite was used for the joints. The end of each joint which are 1.5 meter wide was ended with trees. The root collar of the trees was cover with soil for watering in a size of 1.5 x1.5 m (square), and it was decorated with white stone to avoid the mud and to look more decorative.

In a study conducted by Sakici and Var (2014) in which they investigated the Design Criteria for the Garden (Outdoor Therapy Units) of the Mental and Nervous Diseases Hospital it was mentioned that the use of curved lines instead of straight, rigid and linear lines in the therapy units is more effective due to its relaxing effects in term of the landscape design [17]. For this reason, vertical and parallel forms which create serious effects were preferred instead of the curved lines which give the sense of relief on the hard floors at the north-eastern and northwest entrances. The reason for this preference is the fact that the building to which this place belongs to represents a university and that this unit governs the university. The northwest entrance and its floor patterns are shown in Figure 7. Since the main entrance of the Rectorate building is a place used often by the protocol

vehicles, burnt granite material was preferred for the flooring of this area in order to make it more durable for the vehicle circulation. The images in this regard are shown in Figure 8.



Figure 7: The northwest entrance and its flooring pattern



Figure 8: The flooring pattern of the Rectorate's entrance

Water surfaces, sitting/resting units, flagpoles and multipurpose outdoor recreation area are included within area which is situated between the north entrance of the study area and the main entrance of the rectorate building. The main coating element preferred in this region was the cube granite stone. Brick was used for the joints and a spiral form was made on the linear line. At the end of the spiral form, there are two pools and a water surface. The water which is the basis of life and existence and which is the symbol of clarity symbolizes the infinity and transparency of the university. The design of the pool was tried to refer to letter "D" which is within the logo of the university. The images of the water usage and the resting areas are given in Figure 9.





Figure 9: Water usage and resting areas

The two sides of the spiral which is close to the main entrance of the building are decorated with seasonal plants that bloom in different colours at different times of the year, in this way the continuity of the herbal decoration is ensured according to the change of the seasons. An image regarding this was given in Figure 10. Apart from this, the species diversity was avoided in terms of the plants. The reason for this was based on the opinion that placing many species in small areas may lead to a complex structure.

The northeast and the northwest entrances were emphasized with trees. The species of *Prunus cerasifera* 'Pissardii Nigra' (ornament plum) and *Lagerstroemia indica* were preferred on these axes, while *Liriodendron tulipifera* (tulip tree) were preferred in the area where pools meeting the northern entrance were situated. The species of *Photinia serrulata*, *Nandina domestica* (sacred bamboo), *Picea pungens glauca* (blue spruce), *Stipa tenuissima*, *Thuja orientalis* (chinese arborvitae), *Cotinus coggygria*, *Abelia grandiflora* were planted to the surrounding green area.



Figure 10: A pattern made with seasonal flowers



The drainage canal system of the study area was solved by collecting the water in the area and connecting it to the drainage system of the road in the north. The lightening elements placed under the trees and on the floor provide integrity together with the other aesthetic lightening elements that illuminate the building and add a nice harmony to the night view. The images related to the drainage canal and the lightening elements are given in Figure 11.



Figure 11: Lightening elements and the drainage canal

Conclusions

The study area is the entrance of the rectorate building which is the most remarkable point of the Duzce University Campus. Since it is a public space which is always on agenda and because it is the most prestigious structure of the campus, the creation of the design fiction suitable for this area is the starting point of this study. Starting from this, the area was handled as a whole within the scope of the study, the necessary data was collected, the requirements were determined, the design processes were developed within the scope of the basic design principles, elements and the requirements then finally the application was carried out.

The outdoor activities in the public spaces can be simply divided into three groups including mandatory (necessary), voluntary and social activities, each of these groups includes various demands on the physical environment [18]. When the study area is assessed in this context, it cannot be said that it is a place for voluntary or social activities. Since it was a mandatory (necessary) activity space, the usages recommended for this area were also limited, attention was paid to create the spatial fiction in a way so that it could meet the minimum requirements and the design processes were developed with an understanding to meet the basic recreational needs.

Although, it is advantageous for the study area to be located in the higher part of the campus, it was considered disadvantageous that visual relationship could not be established between the construction and the other usage area due to its location. However, when evaluating the building and the study area as a whole, there is a possibility to watch the study area from different heights and angles from the balconies, terrace and windows which are on the front that faces the study area. The study area has different flowering effects and colours especially in the different seasons thanks to the fiction in the plant design. Thus, the study area can present a rich visual feast from different heights and angles at different times of the year. Thanks to this feature the study



is predicted to be a sustainable place. According to Chiesura (2004), Cities' sustainability and regeneration strategies mainly focus on man-made and built components of the urban environment [19].

As a result of the right and complete implementation of the landscape planning and design processes, it is possible to design open and green places which are satisfying ecologically, aesthetically, functionally and in term of quality and can meet the needs of the stakeholders both in the rural and also in the urban study areas. It is not possible to expect the success of the planning and design work done within this process unless the required importance is given to each stage [12]. Although the studies including the design process are similar to each other in terms of the general framework and functioning, but it is important to keep in mind that each study has different idea and spirituality, in this sense the entire processes including the data collection, determination of the problem, decision making stage, implementation and maintenance should be discussed thoroughly for each project.

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