New Building Design in Original Rural Texture within the Scope of Sustainability: A Studio Experience - Konya Kilistra

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ABSTRACT

Sustainability is a dynamic process including the concepts of time, continuity, conservation and liveability with change. The architectural principles of sustainability are the production of the one belonged to "*place, culture and context*", conservation of resources and the design of liveable environments. In this scope, it is necessary to maintain the relationship between today and future with the creative continuity of the past in historical environments where has its own unique characteristics formed in a determined process.

The adopting and application of the sustainable architecture principles in local and cultural scale as architectural design approach can be provided by education programs. This experience is gained in the design studios in architectural education. The importance of the design studios in the architectural education is very much and valuable. Design studios are application areas where the knowledge gained in other theoretical courses is synthesized. The problems in the design studios and their solutions contain serial systematic learning which has content-subject, theme, place, context, method and process. Students improve themselves by searching solutions for the problems they face in the design process with their studio executives' experiences. The idea of experiencing to design a new building in a historical and at the same time rural texture where the quality of the place is used as design input in a historical environment as an expression of a culture and historical accumulation in design

studios and the students adopting to produce buildings sensitive to sustainability is common view of the architectural academicians in all over the world. In the name of making the students gain the sustainable architecture consciousness, the study area of 4th Semester Design Studio in Department of Architecture in Selcuk University is given as "Kilistra Urban Archaeological Site" where the criterion formed by the historical and rural environment data should be turned into architectural values and leads the design decisions. The design problem in this site rural area, where has unique qualities, was determined as designing a "culture house" - a socio-cultural centre both the local people and visitors would use together and the students are asked to produce a new building belongs to place and context in this archaeological site. The problematic of how to design new buildings in original, historical and rural environment, how they should be, how to maintain the socio – cultural sustainability in the context of place – culture and identity are exposed.

In this study; the process of new building design realization in historical environment in the scope of providing the sustainability of place ,context, culture, identity, locality, history, texture, tradition, originality concepts are explained. The analyses of the basic concepts like tradition and relation, and design products were exemplified.

Keywords: sustainability, new building in historical rural area, architectural education

1. INTRODUCTION

Throughout the world architectural education is based on both theoretical and practical courses. Studio courses are significantly important in architectural design curriculum. Design studios are a place of synthesis where theoretical knowledge from other sources is processed (Türkyılmaz 2010 s. 68). The questions asked in design studios cover a series of procedures including content-topic, theme, place, context, method and process. Thus design studios are the places where students encounter issues such as design problems, context, field inputs, and climate for the first time and experience design alternatives and designing methods.

Life cycle assessment, preservation of resources and designing liveable environments, human and nature relationship, using spaces in line with ecological and social criteria, aesthetic sensibility, using functional, durable and local materials and techniques are among the principles of sustainable architecture. Although sustainability is a relatively new concept it is connected to a rooted worldview. Local data, especially those regarding climactic features, have been used in architectural designs by rationalist builders since Antiquity (Oktay 2002). Sustainable architecture

principles can become an integral part of local and global architectural design approaches only if they are in good relationship with and included in the curriculum. During the design studio experience, designing a new building in an archaeological site texture using the features of the field and the physical and cultural values of the said context as design inputs and realising these within a historical environment that embodies the cultural and historical accumulation of the place has been an important criterion for developing an awareness of sustainability in students of architecture.

2. THE CONCEPT OF SUSTAINABILITY AND DESIGNING A NEW BUILDING IN A HISTORICAL ENVIRONMENT

The concept of sustainable architecture is the mouthpiece of an approach that "*cares for man and nature relationship, accepts climactic and topographical data as indispensable pre-data set, and seeks to effectively use resources*" (Özkeresteci 2001). In other words sustainable architecture can be defined as an architectural approach that *"is in harmony with its surroundings, climactic conditions, society and culture; establishes a historical continuity; consumes less energy during production and use; is locally produced and uses easily recyclable materials and offers a cycle in the ecosystem"*(Karslı 2008).

A sustainable settlement is not based only on economic productivity and profits but also on humanitarian and ecological values. In this context, walkable settlements, human scale structuring, variation in urban spaces, healthy buildings, protected nature, and the existence of open-green areas are considered as basic components. In order to achieve sustainability the design should reflect local climate, ecosystems, natural materials, and flows of energy, water and resources. Such a design is expected to unite people with the natural landscape, use natural and cultural resources efficiently and reveal the identity of spaces (Alkanlıoğlu et al. 2011).

Within the understanding of sustainable architecture historical environments are considered as a resource that should be perpetuated between today's society and new generations to come (Anonymous 2007). The main reason for protecting historical environments is protecting, developing and protracting the sum of values that led to the production of such environments in its entirety. All periods that represents the "new" have to be rooted in the values of the previous periods in order to live and continue their existence. In this sense, each and every new period has to match its values, which are a synthesis of the past values, with the values of former cultures. Today, the main problem concerning the designs in historical locations becomes how the relationship between the old and the new could be established. Designing

new buildings in the historical texture cannot simply be reduced to freely selecting and using traditional components. As a principle the life culture should be understood and internalised as a complex whole that contains contextual data in both physical and cultural senses. Thus, it might be asserted that historical continuity starts with conveying the living culture to future generations (Karakul 2009). Doing "new" necessitates an understanding not only of the living culture but of other contextual components, as well.

3. STUDIO EXPERIENCE

3.1. Qualities of the Place (Design Field)

Kilistra (ancient Lystra - mentioned 6 times in the NT) is located just north of the Turkish village of Hatunsaray - about 21 miles [35 km.] south of Konya. Kilistra antique city is located in Gökyurt village of Hatunsaray town in Konya Meram district where is in 49 km south-west of Konya(figure 1-2). Here is the city where Lystra Paulus and Barnaba came to after they were dispatched and run away and started notification. There are very small number of architectural works remained. Today it is in a form of tumulus (archeol).

Figure 1. The location of Kilistra in Turkey (Anonymus 2015 a)

Figure 2. The location of Kilistra in Konya (Anonymus 2015 b)

The settlement around this antique city is in a unique place for its topography, natural formation and the view of the place is opened through the canyon. The street-surface relationship forming the settlement includes different formations and typologies in human scale. In the dwellings forming this fabric, there is a formation providing inside-outside wholeness and transition. Semi-permeable and semi-open courtyard of the dwelling is the main place where the life goes on.

Figure 3. Kilistra general view

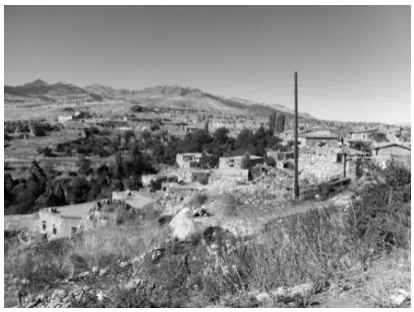


Figure 4. Kilistra general view

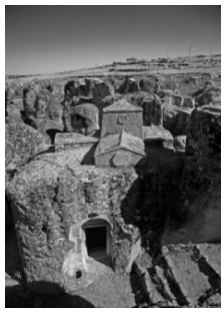


Figure 5. The detail of Kilistra settlement

Figure 6. The detail of Kilistra settlement

Figure 7. The detail of Kilistra settlement

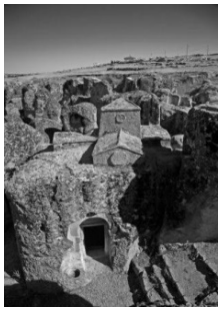


Figure 8. The detail of Kilistra settlement

The spaces gained from the topography are used as storage and animal care areas in dwellings. Life goes on mainly on the upper levels. Stone and wood are used together as building materials. Different oriel typologies, corners, completions and transitions upon streets on the projecting surfaces of dwellings through streets expose primitive but highly aesthetical formations. The integration of the settlement with the place it is located in, its ecological sensitivity and the harmony between streets and topography give the feeling that the dwellings were always there. The settlement has a unique formation with its historical, cultural and architectural values.

Figure 9. The detail of Kilistra settlement

Figure 9. The detail of Kilistra settlement

Figure 10. Traditional Kilistra dwelling inside-outside relationship

Figure 11. Traditional Kilistra dwelling courtyard

Figure 12. The detail of Kilistra settlement

Figure 13. The detail of Kilistra settlement

3.2. The Studio Work

The architectural principles of sustainability are concerned with the production of the "local". In order to have the students focused on the principles of sustainable architecture and form an awareness of sustainability the subject of the "Design Studio" for seniors at Selçuk University, Department of Architecture was determined as "Konya-Kilistra Archaeological Site". The design problem was "building a socio-cultural centre that could be used both by the local people and the visitors" or a "house of culture" in this site which has unique characteristics. The students were asked to design new buildings regarding the location and context of this archaeological site.

Figure 14. Design Area

Figure 15. View expansion in design Area.

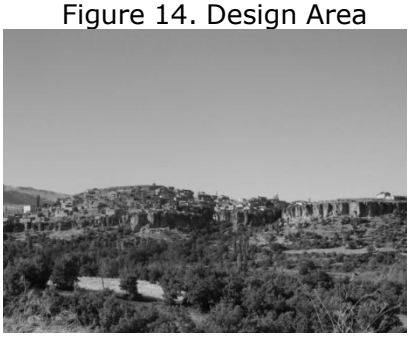


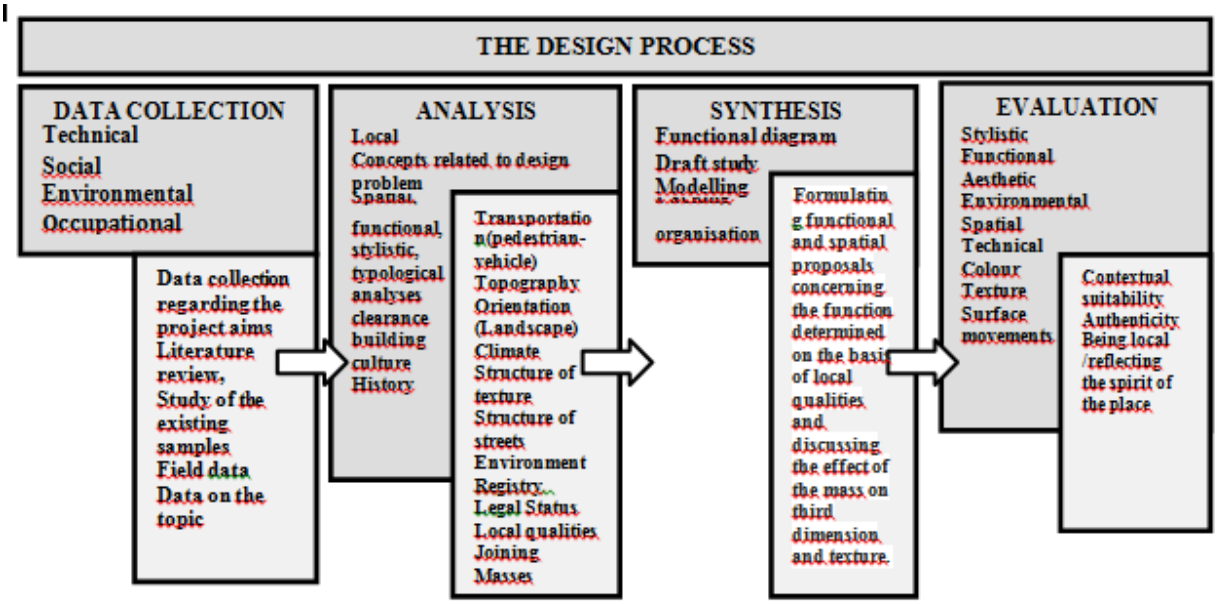
Figure 16. Design Area from a distance view.

Figure 17. Students in design group

The basic principle of the studio work is understanding the context as a physical and cultural whole and a process where transformation should be observed and designing the new building as an integral part of this natural process of transformation. This

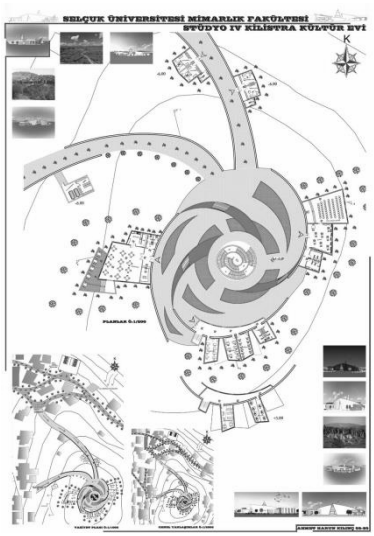
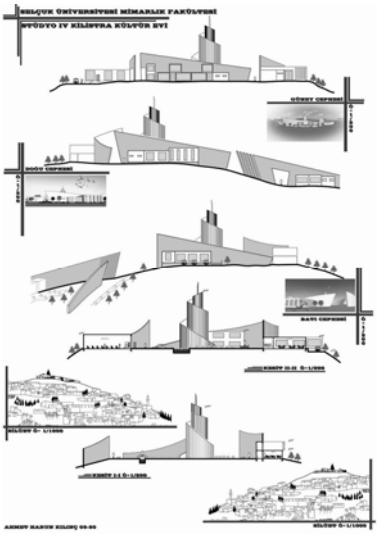
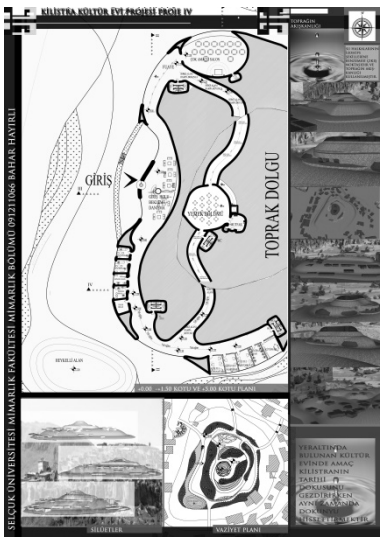
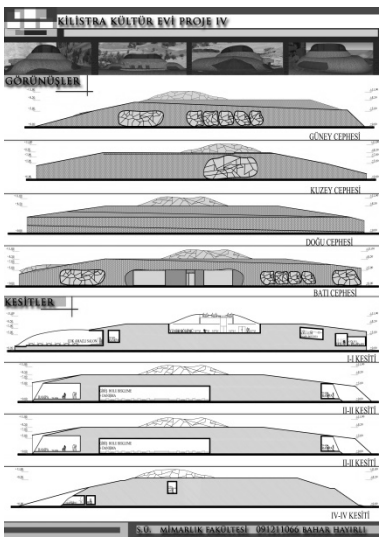
principle might change according to the approach used by the architect, the individuality of the architect and the distinctiveness of the area. Making a design that matches the context necessitates using both objective methods for gathering information about the location and documenting these alongside an interpretation of the objective data which is embodied in the method developed by the architect for the location. The students are expected to have an explicative and critical approach especially while determining the sustainable qualities of the living culture.

Table 1. The Design Prosess in Studio



There are different understandings related to designing new buildings in historical environments. In the first design approach the building needs to merge with the environment becoming a part of it. Another design approach suggests an organization that would be in contrast with the environment and would radically stand out. In both conditions the priority is laid on analysing the context and choosing the related design approach (Farrelly 2007). During this architectural project course which lasted 12 weeks the students, all sophomores during their 4th semester, explored issues as conducting field analysis, programming needs, and defining characteristics of the location. They have further studied on the qualities of the present area, contextual analysis, issues of sustainability (Broker et al. 2008) and simultaneously produced ideas regarding the new building to exist within the archaeological site thinking local and global sustainable design decisions.

Table 2. The Student Projects in Studio.

SAMPLE PROJECTS	HARUN KILINÇ			Generally in harmony with the topography and the field data. However, both the style and the spatial and massive design are in stark contrast with the environment. The glass surfaces were intended for reflecting the authentic Kilistra building texture and making the visitors feel the historical continuity. The long and high wall surfaces alongside pedestrian routes both limit, supress and direct the visitors.
	BAHAR HAYIRLI			As a continuation of the building tradition formed by the successive cultures of Kilistra the body of the building is entirely buried in the field. The contextual suitability was achieved through an interpretation and adaptation of the cave

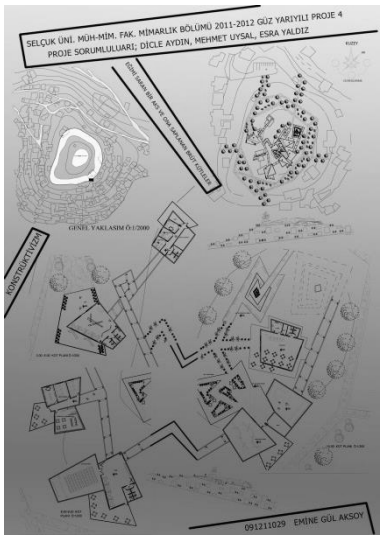
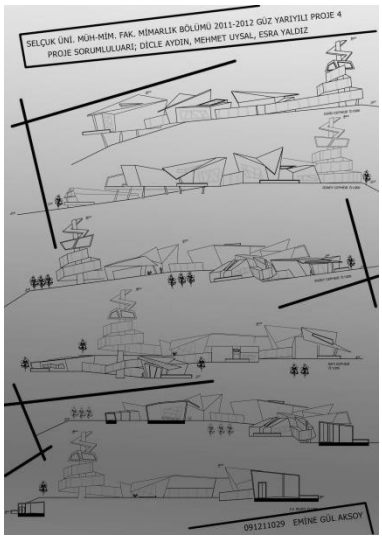
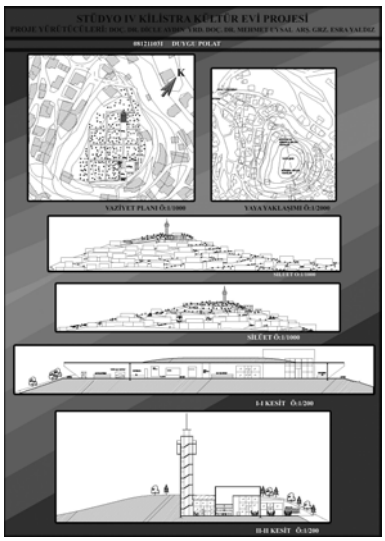
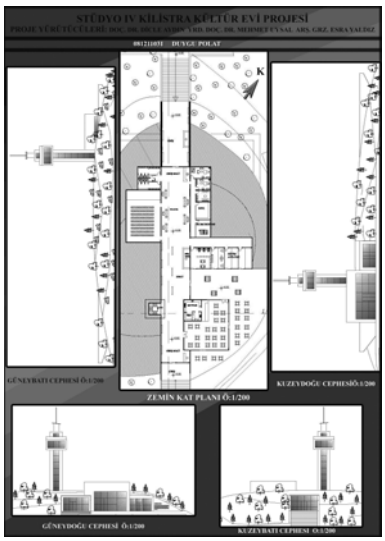
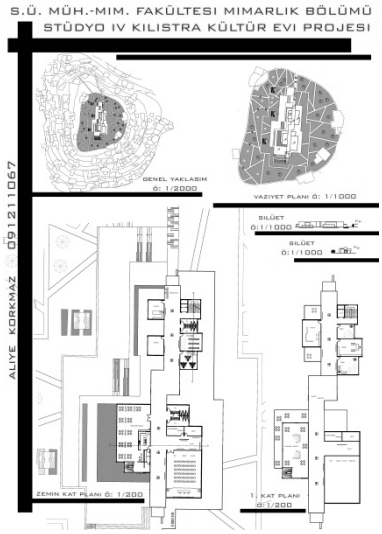
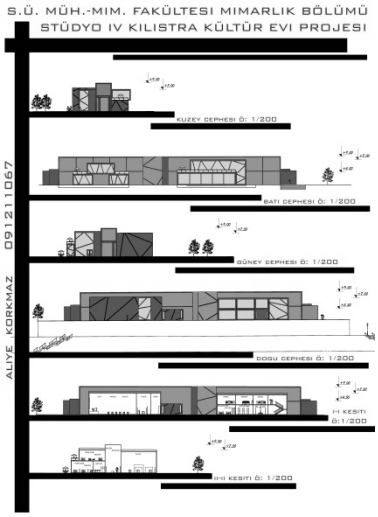
				dwelling in ancient ages instead of confirming the texture of the field.
	EMİNEGÜL AKSOY			A complex whole comprising the physical and cultural qualities of the context was intended. The design approach is compatible with the topography, field data, and natural environment. The partitioned texture constituted the largest input regarding the design. However, contrasting figures are stressed rather than harmony with the texture. The design language does not match the texture it was used in.

Table 3. The Student Projects in Studio.

SAMPLE PROJECTS	DUYGU POLAT			An architectural approach that is in harmony with the topography, field data and natural and artificial environment is dominant. A successful design and an architectural understanding in harmony with the texture were adopted. The building was not foregrounded. Instead of being aggregately stressed a view terrace was formed for observing the texture.
	ALİYE KORKMAZ			While the design expresses continuity in horizontal direction, the functions placed along an axis contributed this formation. It is a design which become integrated with the topography in third dimension and it includes references of the historical fabric it will be placed in with its

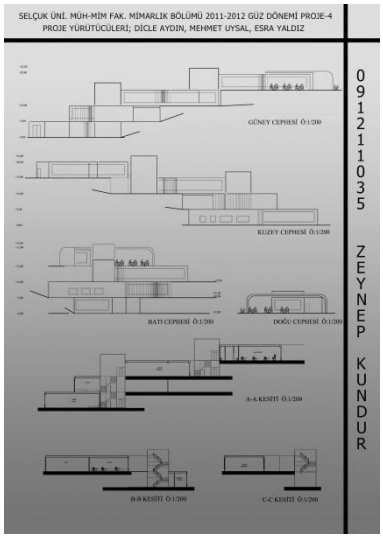
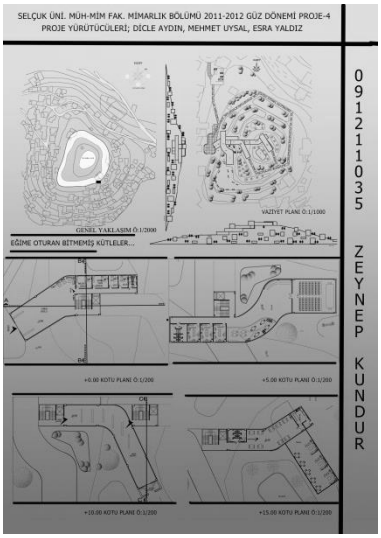
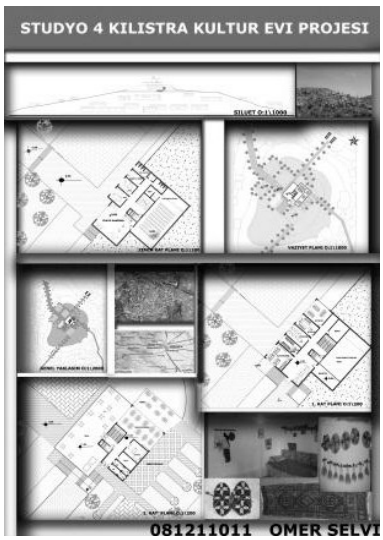
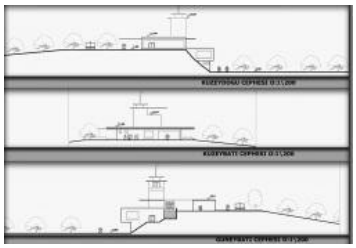
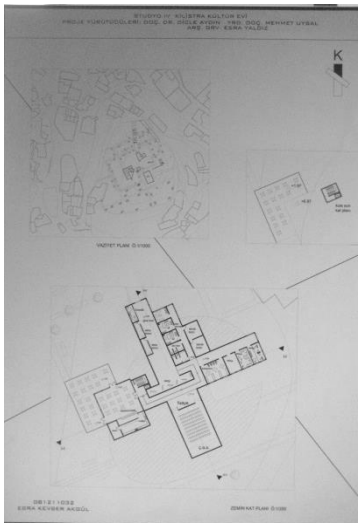
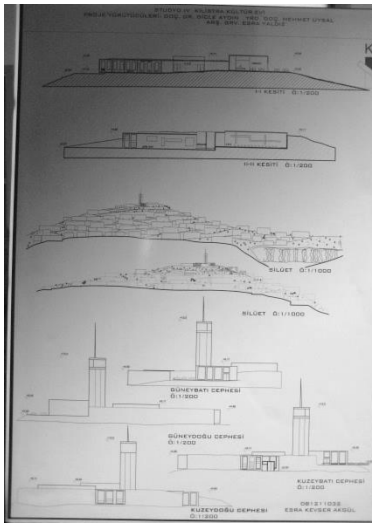
				cubical separated formation.
	ZEYNEP KUNDUR			A complex whole comprising the physical and cultural qualities of the context was intended. The main goal of the project has been feeling the visible continuity of the existing buildings. The continuity in the horizontal lines contribute to the visual connection with the texture and thus to contextual suitability.

Table 4. The Student Projects in Studio.

SAMPLE PROJECTS	ÖMER SELVİ			Design is formed with an approach using the data of the topography. For this reason design is placed on slope, levels and elevations. This formation is exposed as a product of the habit of using the topography on the existing settlement.

	ESRA KEVSER AKGÜL			Design is placed on the top of the hill in the site; however it is buried into the slope not to damage this formation. Only the terraces on the upper level give the opportunity of positive course and view to users.

4. EVALUATION

During the design studio the students were encouraged to consider the new building as a part of the protection process which was aimed at bringing new life to the archaeological site. Every new building added to this site would perpetuate the process of change and affirm that it was a product of its time.

In studio design understanding, it is aimed to understand and live the place, feel the social fabric, user, physical environment, historical structure and all cultural codes. For this, determinations are done on the site together with the students and "genius loci" is tried to be sensed by questioning in the place. It is provided that the students should strengthen the design data especially like street, dwelling, material, solid-void forming the settlement fabric in Kilistra by observation and determination studies. With this knowledge the answer to the question of "what is the need of the place?" is searched. All of the students in the studio generated unique designs which are belonged to the place, appropriate to the needs of the place and special to the place in the light of their own inferences. Formal continuity, cultural continuity, topography and ecological approach stand out in designs.

It has been revealed during the studio experience that the abstract values of historical textures which are derived from the cultural infrastructure have a regulating effect over the built environment.

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