

The Concept of Limits in Architecture as an Instructional Tool for Design Education

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Abstract: The paper aims to re-thinking limits in architecture through an educational approach. A study on the concept of limits in architecture provides an understanding of architecture's sensitivity, responsibility, and bindingness. To investigate the effect of limits on design, the paper has conducted a discussion of a design studio experience as a case study. As a method in the study, an architectural design studio where students are asked to produce architectural solutions by giving physical legal, and social limits has been established. In the architectural design studio scenario, Garipce Village, a fisher village located on the border of Istanbul and a first-degree protection area by the Bosphorus zoning laws, was given as a design problem to second-year architecture students. The design solutions that the students brought to the limits of the village both exemplified how architectural design sought an answer to the limits and demonstrated how to approach rural areas. The limits of conservation areas, the social implications of the conservation sites, and the physical limitations of the village compose a limitation set for the design problem of the rural area. The outputs of the design studio are discussed in the context of architectural solutions for limits. The results revealed how questioning the concept of "limit" transformed students' learning experiences in the design studio. It has been observed that the act of designing with limits improves students' awareness, strengthens the relationships established with the context, and incorporates the social dimensions of architectural design into the design.

Keywords: Architectural Design Studio; Architecture in Conservation Areas; Rural Architecture; Limits in Architecture.

1. Introduction

Limits are the fundamental problem that the designer frequently encounters in questioning the perception of design and concern all design processes from space to urban scale. The design limit is also a determinant of architectural design. Design studios, where the limits of architectural design are discussed and solutions are developed in this context, are educational areas that focus on the solutions of the problems shaped by the limits.

In architecture, the concept of limits refers to many restrictions in architectural design. The design is ordinarily limited by physical borders, local zoning permits, natural and historical conservation site regulations, construction rules etc. The limits in architecture sometimes appear as material choices, structural system difficulties or economic limitations. The user of the design is a limit as wells as the nature of the site. Indeed, as John Locke (1689) said "Where there is no law, there is no freedom". A common spur in any creative process is a limitation, of any kind: formal, functional, constructive, etc.

In this context, the concept of limit as a reality in creative processes and a driving force for design has always been an instructive element in the nature of architecture. From this point of view, the limits of design turn into paradigms to be solved in architectural design education. In the context of this conceptual framework, the theoretical background of the study is considered and associates the concept of limit in three contexts: the concept of limit in design; limit concept in architectural design; The possibilities of limits as an instructional element in an architectural design studio.

The paper opens a discussion in the context of architectural design studio over architectural design limits. In a scenario where the concept of limit in architecture is placed at the center of the architectural design problem, it is investigated how limits can turn into an instructive element in the design. After discussing how limits shape architectural thought and how they guide creative processes from a theoretical framework, this article aims to reveal the educational aspect of limits in design education over the limits of a village in Istanbul through the architectural studio. In this article, we discuss “the concept of limits” in architecture as a learning support tool in design thinking. In the scope of this article the limits are considered as instructional tool elements of architectural design. The designer is surrounded by the limits in the real world during the creative process of thinking, and thus he/she cannot be in the position of a creator without the limitations of the nature of the design. This awareness not only affects the designer's ethical values such as worldview, environmental awareness, and social approach but also shapes the formal and phenomenological existence of design. Therefore, it is an obligation for design education to conceptualize the system of limitations on design for students of design. This understanding brought us to consider the concept of architectural design in the architectural design education curriculum.

2. Theoretical Background

2.1. The concept of limits in architecture

In order to investigate the didactic effects of limits mentioned above, it is necessary to define

the limit in a conceptual context. First of all, to define the importance and possible instructional features of the limit concept in architectural education, it is necessary to focus on the concept of limits from the design and architectural perspective first. Therefore, the concept of limit, which establishes the conceptual background of the study, constitutes the theoretical background under three main headings for this research. These headings are "limits in design", "limits in architectural design", and at last, conceptualizing the limits as an educational tool in the architectural design studio.

Limit is located in the intellectual and operant background of design creation with adjectives such as determinant, guide and developer of design. It has been tested in creative fields that certain limitations trigger the creative process of design. There are cases easily extrapolated to the world of architecture, such as Oulipo in literature. This group utilized mathematics and grammar to combine a series of limitations, initially random, that served to trigger the writing of the books. The book "Exercices de style", by Raymond Queneau (1947), one of the authors of the Oulipo Group, reveals how limitations trigger creative thinking. Oulipo related mathematics and grammar to combine a series of limitations, initially random, that served to trigger the writing of the book. Queneau described the same story in 99 different ways, by using different Oulipian techniques in "Exercices de style" and created an advance formal constraint for text. The reproduction of a single story by restricting it to different narrative forms sets an example of how creative production can multiply with predetermined limits.

Every being exists and differs with its limits. There are limits in everything we observe in nature; There are boundaries of assets from micro scale to macro scale (Mumcu Ucar and Ozsoy, 2006). In addition, the concept of limits can have non-physical meanings. The existence of non-physical limits can be understood through relational context. The term “limit” cannot be positioned outside a relational structure (Dincer & Aydınli, 2016).

Substantially, if there is a limit between x and y, x stands as the reason of y's becoming. The concept of limit, with its physical and relational meanings, can also refer to the elements and relations in the production and theoretical background of the structural environment. "The border provides the possibility of combining many different aspects of architectural action and space and works to emphasize the connection of space with people from all sides. The border is more than a two-dimensional line." (Mumcu Ucar & Ozsoy, 2006, p. 12, translated by authors).

The concept of limits also appears as physical boundaries in architectural design thinking. Since there are boundaries in every element of nature, human beings first saw, used, and learned by natural boundaries. The possibilities of the boundaries, arranged by humans, provides the design inspirations (Mumcu Ucar & Ozsoy, 2006). The physical limits, the boundaries, determined by the expansions of the boundaries exist at all levels of the environment. Thus, openings that present spatial structures, such as windows, walls, thresholds, transitions, are designed. The physical concept of limits can also be related to the physical difficulty of the architecture which is directly related to the structural system design. Since the limits of the laws of physics are directly related to the carrier limit of the material, they have historically been seen as the main factor affecting design. For instance, the fact that the dome form, arising from the limitations of the carrier system technologies, has shaped architecture for hundreds of years.

Another approach brought to the topic is that the transformation of architecture, as Savasır (2008) suggests, is redefining the limits of discipline. Savasır (2008) explains how avant-garde formations during the 1960s have reconceptualized the limits in architecture by changing, folding, multi-layering, cutting out, and transform the architecture is that is known. It can be argued that the architectural styles emerged from the instinct to change the limits, as Savasır (2008) described the idea of reconsidering the limits in architecture, which he defines through the example of avant-garde

style. "Cross-limits" as an attitude in architecture appears in Stephanie Riker's reading of Bernard Tschumi. Riker (2013) interprets Tschumi's innovative and extraordinary approach as building with the intention of redefining the concept of architecture and transcending the limitations imposed by society. Tschumi explores how drawing upon exterior concepts will breach the limits of architecture. As seen in his definition of architecture, limits are challenges, and yet, the limitation of architecture continuously challenged by Tschumi.

Architecture is mentioned with limits since it is also not independent of laws and regulations in construction practice. In terms of construction restriction and site area regulations, architecture, as the design process and as the construction practice, is limited by the local regulations, zoning laws, and legal restrictions. In other words, architecture is based on the concept of construction limitations and laws. The architectural practice, which is limited by many factors such as earthquake regulations, fire regulations, elevator regulations, parking regulations, zoning law, urban planning, cannot exist with new spatial formations, especially in places declared as protected natural and historical site areas. Although site area restrictions are significant for protection from possible undesirable settlements, there are negative consequences that site areas face such as losing the social and economic standards and come to the brink of extinction. Therefore, the consequences of the regulation also can be considered as another sort of limitation.

As can be seen, the concept of limit in architecture theory and practice makes transitions between meanings and has different meanings within different relationalities. What is certain is that the architectural design process, the knowledge of making, and the built environment cannot be thought of without borders. On the other hand, the concept of limits and design has a dynamic relationship that triggers creative thinking.

2.2. "Limits" as a Tool in Architecture Design Studio

As seen in the study of the concept of limit in architecture, architecture is not independent of borders, but the limits of architecture exist as a kind of driving force that causes the development and learning of architecture. It can even be said that in the examples existing in the literature these limits are "challenges" that lead to design thinking.

Feigenberg (1991) suggested that architectural education should focus on the enhancement of their ability to think critically and to learn how to learn. With a similar approach, the concept of "limits in architecture", which restricts, controls, directs and develops architectural design, is seen as a part of the critical thinking structure of architectural education. These approaches have encouraged us to research by placing the limits in architecture within a realistic scenario in architectural design studio training.

As Ockman (2012) has stated, architecture school is where the architecture in all its disciplinary and professionally cognates, is where collectively constituted. Based on this perspective, we suggest that the architecture design education is responsible for introducing the limits and responsibilities of design to candidate architects. Within the architecture school, architectural design studios are areas of discussion and production where this responsibility is assumed intensely. According to the outputs of Uluoglu's (1990) work, the design studio is the most important area in the architectural education program. For this reason, the architecture design studio is generally given the lead role in architecture education and it is considered as the core of the architecture school curriculum (Lawson and Dors, 2013). Fatouros (2002) describes the design studio as a discussion area where people come together to ask each other questions, think together, and develop various relationships. Senturer (1994) defines the design studio similarly; a place where knowledge and skills are tried to be given to the participants. Therefore, these are the environments where the

limits of architectural design are transferred to the designer candidate with the established design problem in the context of legal, structural, physical and social limits.

In addition to this major impact on architectural education, the design studio is also responsible to create awareness about urban context, current constriction regulations, and future architecture scenarios. Most importantly, as Feigenberg (1991) stated that architectural education does not focus on students' retention of facts and formulas, but rather on the enhancement of their ability to think critically and to learn how to learn. For this reason, the design studio should be an environment where the limits of architectural design are critically discussed as well as they are described and introduced to the students.

The nature of design is a process that involves phases of analytical understanding, critical thinking, and creative decision making (Salama, 2005), and it is taught to students in the design studio with the design problems given to develop these capabilities. Yucel and Aydınli (2015) note that the architectural education is also an education that aims to increase the level of awareness, therefore, their social and environmental sensitivity, to gain critical thinking skills, and to train intellectual professionals. As it is described, the design education is "The issue of creating an environment for discovering, integrating, sharing and applying the lifelong knowledge to nurture the learning habit and mind structure" (Yucel and Aydınli, 2015, p.18, translated by the author). Therefore, the ability of the individual to understand, internalize knowledge and skills should be evaluated under the responsibility of design education. In contemporary architectural education, this design learning takes place in design studios where students encounter design problems, find solutions by experimenting, and learn to learn.

The nature of architecture design studio is based on students' experience on a given design problem. Because of this nature of the studio, the design-related skills, and fundamental inclinations that are acquired in these studios

influence the future designing actions of the students (Kararmaz & Ciravoglu, 2017). As

Figure 1 shows that based on literature, studies that reveal the role and values of the

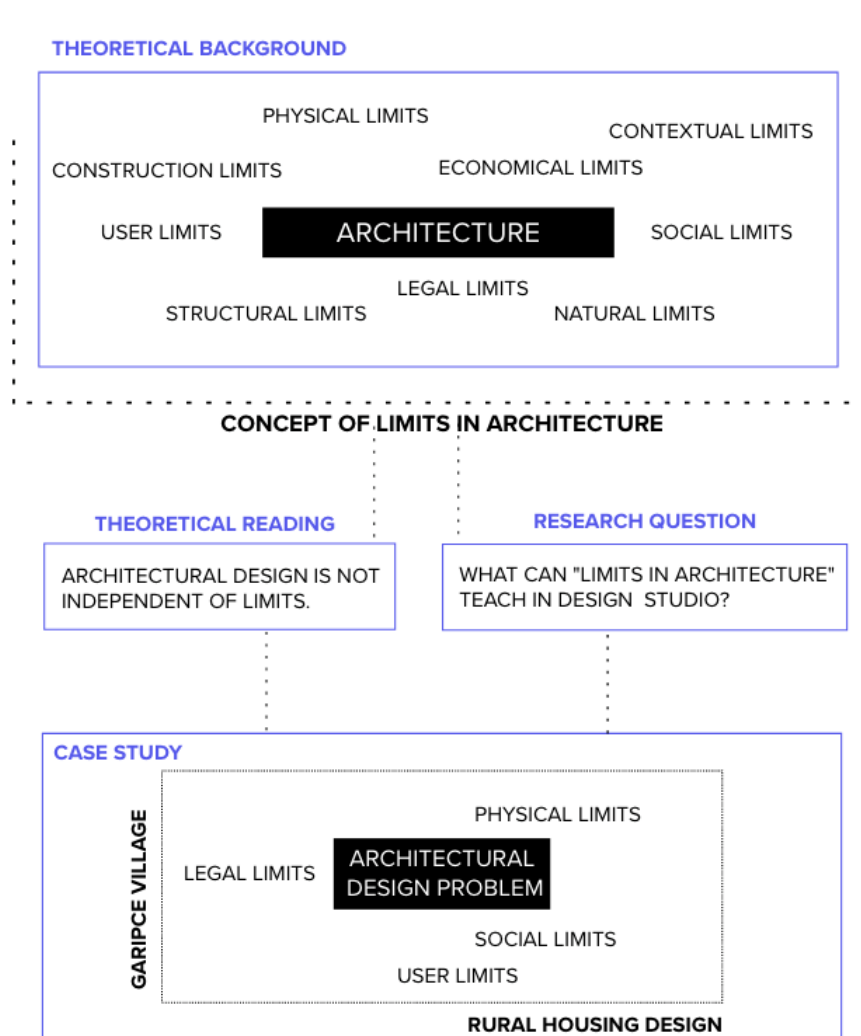


Figure 1. Transferring the concept of the limits of architectural design to the case study.

Shaffer (2003) suggests, three basic components of the design studio, “how a student’s progress is judged, what kinds of behaviors are rewarded and, what the discipline values and/or rewards”, are carefully chosen during the organization of design studio. Therefore, the main expected behavioral changes of the students are organized according to the given design problems and approaches. This awareness suggests that the design problem given in the design studio will change the approaches the student will develop in the future.

architectural design studio in architectural education, this study focuses on the concept of architectural limits included in the architectural design process, through the architectural design studio. In line with this focus, limits, which constitute an input for the architectural design problem, are considered as an instructional tool of the architectural design process (Fig. 1). For this purpose, the following chapters explain the architectural design studio that has been designed where the concept of limits forms the design problem. The basic principle of the designed studio is to consider more than one architectural limit simultaneously within the

design problem and use them as instructional tools of design.

3. Method

Within the scope of this study, it is aimed to test the above-mentioned approach with an architectural design studio setup where the limits of architecture are discussed and considered as a design element. Although architecture design studio is based on solving a design problem and creating an idea for the design of a building, it is also an environment to develop an attitude toward the built environment. For this reason, it is considered the right place to conceptualize the limits of architecture and discuss the idea of limits as an instructional tool. With this motivation, in order to understand the limits of architecture and how it can be used as a tool in architecture education profoundly, presenting studio experiments would be explanatory.

Architectural Design III course, which is the third term project in the curriculum of the Istanbul Kultur University Architecture Department, is a residential design project. In this context, giving the subject of "limits in architectural design" as a design problem, as an approach that restricts the residential design and at the same time narrows the existing design criteria, determines the main framework of the

studio. For this purpose, the context of the design studio has been determined as Garipce Village, a small fishing village located in the north of Istanbul. Garipce Village is located near the Bosphorus so that as the conservation area, it is limited in many ways. In addition to conservation laws, the physical and social limitations of the village dominate the housing design problems. This area, with the architectural and experiential features it displays both for limits and in terms of rural architecture, offers a laboratory environment to designers. In this way, it is aimed to create an experimental environment that includes the limits of the design in the basic instructional mechanism of the studio has been set up by limiting the housing design through context, needs, legal obligations, and users.

The method of the research, which aims to reveal the instructive aspect of the concept of border in architectural design education, consists of three main parts: Determining the area that will constitute the context for the residential design of the Architectural Design III course with its limits; determining the limits of the field and asking the students to suggest solutions; Evaluation of design proposals and studio process. The case study created from the architectural design studio and the design

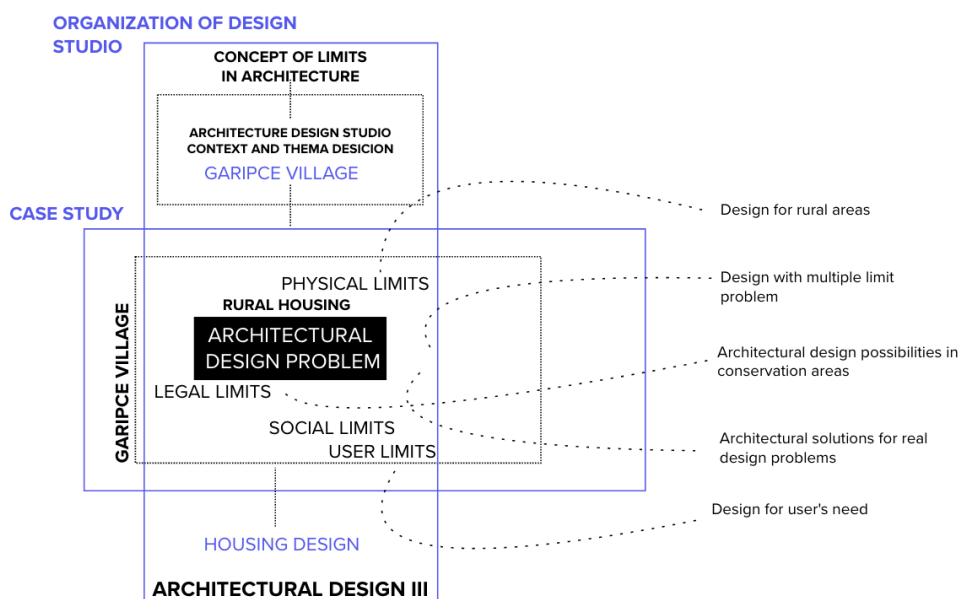


Figure 2. The setup of the architectural design studio that created the case study.

problems it contains are summarized below (Fig. 2).

The case study created from the architectural design studio contains instructive aspects within the limits of the design problem. These instructional parameters can be categorized as the design for rural areas, design with multiple limit problem, architectural design possibilities in conservation areas, architectural solutions for real design problems, and design for user's need (Fig 2). The characteristics of Garipce Village, which is thought to provide a laboratory environment in order to read the architectural design problem over the concept of limits, are discussed in the next section. In the following sections, the architectural design studio process and the result products are discussed.

4. A Case Study: Learning from The Limits of Garipce Village

4.1. A village with limits

Garipce is a fishing village located on the Bosphorus coastline and between Rumelikavagi and Rumelifeneri Village. In mythology, it is known to be the village where the cursed King

François de Tott built Garipce Castle (Fig 1), which is located in Cape of Garipce in Sultan III Mustafa (1557-1574) period (Tekeli ed. 1994). Another historic artifact is the watchtower on the highest hill of the village; however, it is unknown when or by whom it was built. In addition, there are traces of baths, churches, and semi-solid fortress walls in the Buyuk Liman area. There was a shipyard in Great Harbor during the Ottoman period (Karadag, 2003). There are no remains related to the shipyard today. Depending on its inscription the fountain is understood to be built by Hasan Pasha in 1199 for the shipyard. Soguksu Fountain and Haci Suyu Fountain are among the other historical monuments in this region. Apart from these, The Topcuoglu Mansion next to the harbor and some buildings belonging to Cinar and Coskun families are also historical monuments. In addition to these buildings, there are several stone houses.

Despite all this historical background and limited living space, the village has been affected by some recent developments. The Third Bridge (Figure 3) on the Bosphorus



Figure 3. Garipce Castell and The Third Bridge (Source: Authors).

Phineas lived. It is estimated that Garipce was named after "Gyropolis" which means "City of Vultures" because it had a stony and rocky beach in ancient times and the eagles and vultures nested in its high cliffs. Another belief is that Garipce got its name after Karibian. The word "Carib" means, "close, close to place and time, close to noble" in Ottoman Turkish. Historical artifacts belonging to the Byzantine and Ottoman periods can be found in Garipce. The Hungarian origin French architect Baron

connects both sides through the village of Garipce on the European side and Poyrazkoy on the Anatolian side. Debates on The Third Bridge have been ongoing for a long time on the agenda of the country. The highway and bridge passing through the last forested lands on the European side will significantly change Garipce, one of the last genuine fishing villages in Istanbul soon. Garipce Village faces a dilemma that although currently, no construction activity has taken place currently

due to the conservation laws, its needs have increased gradually. The surrounding areas turned into a more valuable area with the construction of The Third Bridge, threaten the village on the one side, but also respond to the internal needs of the village on the other side, creating a tense area. Since the area is a natural conservation area and protected by the conservation law, new houses cannot be built in Garipçe. However, the village is in danger of possible conservation law changes shortly, as its value keeps increasing.

has a privileged position in the world. In addition to this unique set of features, Istanbul has many natural and cultural values such as the Historical Peninsula, Golden Horn, and Bosphorus. This area has been declared as a conservation site since the 1970s and was tried to be protected under a special status. However, the city has been becoming the center of attraction of the economic investments and the country's population, especially in the second half of the last century; therefore, these heritage sites are under the pressure of change and



Figure 4. Garipçe Village's location, at the foot of the Third Bridge, as an important strategic location (Source: Google Earth)

Due to the lack of zoning and construction permits in Garipçe, the village is continuously emigrating. According to the last census, its population is 420 people. It is the smallest residential area of Sariyer with this population. However, while there were 17 houses in Garipçe in the 1900s, this number increased to 65 after the 1970s. Today, this number has reached 105 (URL-1). In the following chapter, the Bosphorus conservation law and its implications will be framed in order to describe the base of the limitations of the village.

4.2. Challenges of the limits: conservation and its consequence

With a 2500 years old historical heritage in geography where two continents meet, Istanbul

transformation.

The power and the responsibilities of urban planning in Turkey are divided between the central and local governments, depending on the scale of the planning and goal settings. The central government, which is more regulator and supervisor in planning, also assumes responsibilities in high-level planning. The power and the responsibilities for spatial planning are left to the local governments; however, in the areas of unique quality and protection, the central government again determines and guides the legislation and its operation. Also, there are also differences in legal regulations according to the nature of the planning area and multiple structures in the distribution of authority and responsibility in

planning. While the practices for zoning and urbanization are carried out with the Zoning Law and regulations numbered 3194, there are separate legal regulations for select areas such as tourism areas, the Bosphorus coast, national parks, forests, and so on. The roles of local governments in planning mostly focus on the preparation of local physical plans. Local administrations have the opportunity to prepare their own regulations for the implementation of the plans, with the approval of the Ministry of Public Works and Settlement (Unal, 2003). In Turkey, the protection of cultural and natural

guides the conservation policy with its policy decisions and determines the basic conservation criteria for the protected areas and structures (Zeren, 1991).

"Conservation Development Plan" is a tool that developed for subjecting and managing urban, archaeological, and natural sites to be planned in accordance with the principles of conservation. It was first defined in the KTVK (Turkish: Kultur ve Tabiat Varlıklarını Koruma Kanunu) Law No. 2863 and was developed in 2004 with some amendments made with the law

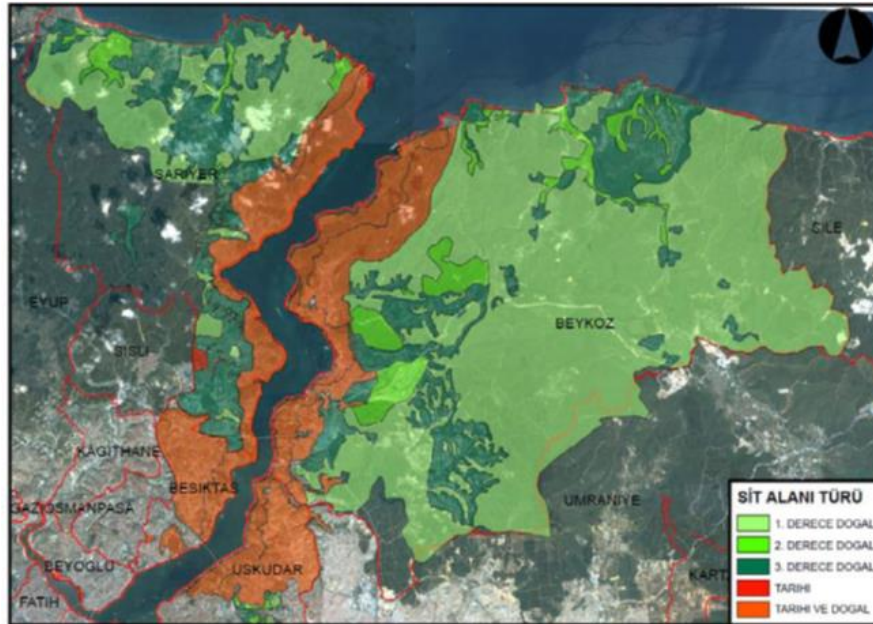


Figure 5. The spatial distribution of the conservation sites in Beşiktaş, Beykoz, Sarıyer, Üsküdar districts. (Source: Dinçer, Enlil and Evren, 2009)

heritage is under the responsibility of the State, depending on the Constitution. For this reason, all kinds of regulations regarding protection should be made under the leadership and supervision of the central government. The state fulfills its duty through the Ministry of Culture and Tourism under the Law No. 2863 on the Protection of Cultural and Natural Assets, and the regulations issued accordingly. The Supreme Council for the Protection of Cultural and Natural Assets, working under the Ministry,

numbered 5226. Along with the announcement of the conservation area and the registration decision, the "Transition Period Building Conditions", which should be developed depending on the degree of the registered area, is also a practice introduced by this law. It is envisaged that these conditions will be produced depending on the unique identity of each region. Due to an act of protection to take place in a region, declared as a conservation area, it is not the only and sufficient condition

to "plan" that area or its surroundings. As a result of the fact that the plan decisions are not developed as "protection-oriented" plans, the region is under the risk of overlapping. The fact that the conservation areas are structured with the plan, the decisions against the basic urbanism principles even containing decisions that are contrary to the basic conservation principles of "conservation development plans" in some cases, constitutes even greater risks. Investment decisions (such as making road routes, declaring the area as a trade and tourism area) contrary to upper-scale plan decisions that contain holistic decisions in a conservation area, emerges as another risk group.

Local administrations are responsible for the preparation and implementation of protection plans within the system that concerns conservation areas. However, within the scope of the plan implementation, projects, and practices for registered buildings and the conservation boards must approve structures in their protected areas. Based on these observations, it is possible to say that the authority and the responsibility distribution in urban planning and conservation areas have a multiple and complex structure on the legal framework in Turkey (Zeren & Gulersoy a.o., 2001). The Real Estate Antiquities and Monuments Supreme Board (Turkish: Gayrimenkul Eski Eserler ve Anıtlar Yeksek Kurulu, GEEAYK), established in 1951, has determined and announced a total of 11 conservation sites in Istanbul within the scope of the Antiquities Law of 1971. When these historically important conservation areas are examined, it is seen that the first declared site was "Bosphorus Natural and Historical Sites" covering the districts of Besiktas, Uskudar, Beykoz and Sariyer in 1974. These mixed site areas with different site areas are 13.581 hectares in Istanbul. The most significant part of these sites (79%) consists of 11 "natural and historical sites". Bosphorus prediction and back view, which is registered as a natural and historical protected area and spread over a wide area, is one of these areas (Fig. 5. Dincer, Enlil and Evren, 2009).

From this framework of conservation laws, we can suggest that rural areas with conservation laws face the "risks and limits", specifically in Turkey due to the distribution of control mechanisms. Based on the Garipce example, it is seen that in the processes of determining, documenting, and announcing the conservation areas, the following priorities are required for the plan and implementation conditions required for the protection of these areas in the context of the risk: Restructuring of the planning committee on the axis of protection, prioritizing contemporary practices in structuring the protection institution, transferring scientific knowledge into practice correctly and spreading the planning culture to large sections of society. Apart from that, the development of comprehensive programs against the results of the social, cultural, and economic risks will also be the priority issue. These risks can be classified into three parts; risks arising from the fact that the culture of conservation is not widespread, risks arising from insufficient public resources for protection, risks arising from low-income levels of the society. In addition to that due to the Third Bridge, Garipce has faced the danger of being zoned, even though it is a protected rural site. This situation shows that the site laws, which emerged as a limit in architecture, may undergo sudden changes.

As a result of all the legal restrictions mentioned above, it is possible to talk about the restrictions in the physical and social fabric of the village. The legal constraints caused by the conservation law, together with the physical conditions of the village, constitute physical limitations (Fig. 6). On the one hand, while the village preserves its physical texture, on the other hand, the insufficient physical facilities caused by this situation cause the villagers to leave the village. As a result of this situation, the villagers cannot accommodate their growing population and they give migration. Consequences such as the presence of an elderly population, the forced to leave the village of the young people of the village, and the difficult economic conditions stem from this situation.



Figure 6. Examples of architectural texture created by physical limits (Source: Authors).

The main action that establishes the relation of the village with Istanbul is the fish restaurants (Fig. 7) serving Istanbul residents at the weekend. While these restaurants cover the entire seaside of the village, they create social space restrictions for the villagers. In this respect, the traces of physical and social

restrictions can be mentioned in the daily life of the village.

Along with the limits arising from the protection laws, the physical, economic, and other social limits which are the results of being a conservation site contain significant information on the architectural requirements of this rural area. Therefore, it is possible to



Figure 7. Lack of social space of locals of Garipce Village is an example of social limitations. (Figure on the left: Url-2, Figure on the right Url-3).

mention three basic limits that limit the design in Garipce Village: Physical Limits, legal limits and social limits (Fig. 8).

One of the fundamental aims of the Architectural Design III course is to stimulate architectural students' awareness of the context

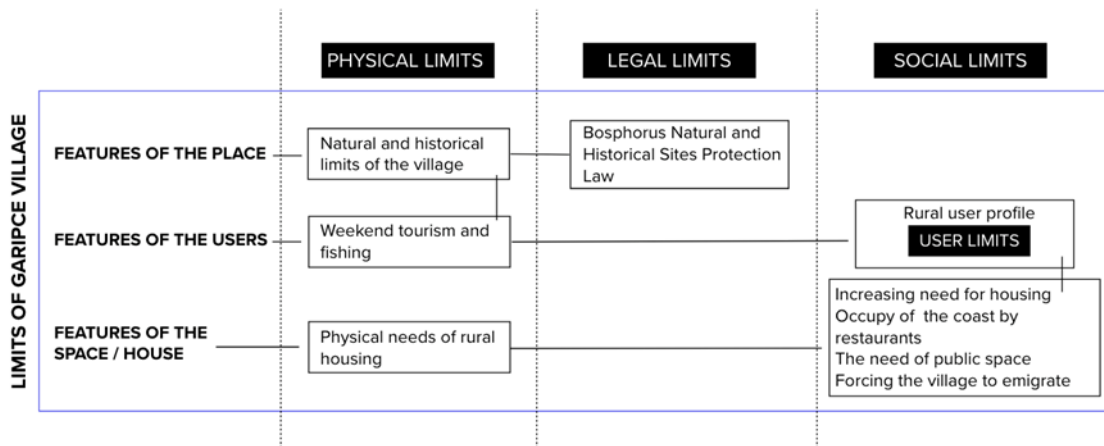


Figure 8. The main limits of Garipce Village

With the features mentioned above, the Garipce is like an architectural laboratory in terms of its limits. Within the scope of the presented architectural design studio, listed limits in Figure 8, are investigated and answered in each student project. The next chapter is focused on the instructional role of the limits in the design studio.

4.3. The Studio: City in the Village, Village in the City

Architectural Design Studio III course, which is in the curriculum of Istanbul Kultur University Architecture Department 3rd semester in the 2019-2020 fall period, is titled "City in Village, Village in City: Garipce". The main design topic of the Architectural Design Studio III course is a single house project with additional practice. Therefore, it is expected from the students to understand the urban context, user profile, legal and social limitation, then to solve a single housing project for this purpose and develop a design idea in between. In this context, the students not only expected to produce single house projects for the daily needs of rural life but also consider the village limits as a design input.

and the impact of the built environment. At that point, the legal restrictions constitute the biggest limitation of the study. At the beginning of the studio, students were informed about the concept of limits in architectural design, as well as the current conservation site area regulations and possible future scenarios due to the fact that construction of Yavuz Sultan Selim Bridge. Although Garipce is involved in the conservation law, as well as the rest of the Bosphorus coast, it is still in danger of reconstruction as a result of the bridge since it creates new construction motivations for the site. Since these constraints cannot change, their assets were accepted and included in the design problem of the project, but the intervention was not expected. During the studio work, it was stated that Garipce Village was not expected to be a solution to legal restrictions because it is located in a protected area. On the other hand, students were expected to define the limits caused by legal restrictions and offer solutions with housing design. Thus, students have developed a design proposal in these limits; they have examined and conceptualize the limitations of interventions in such areas.

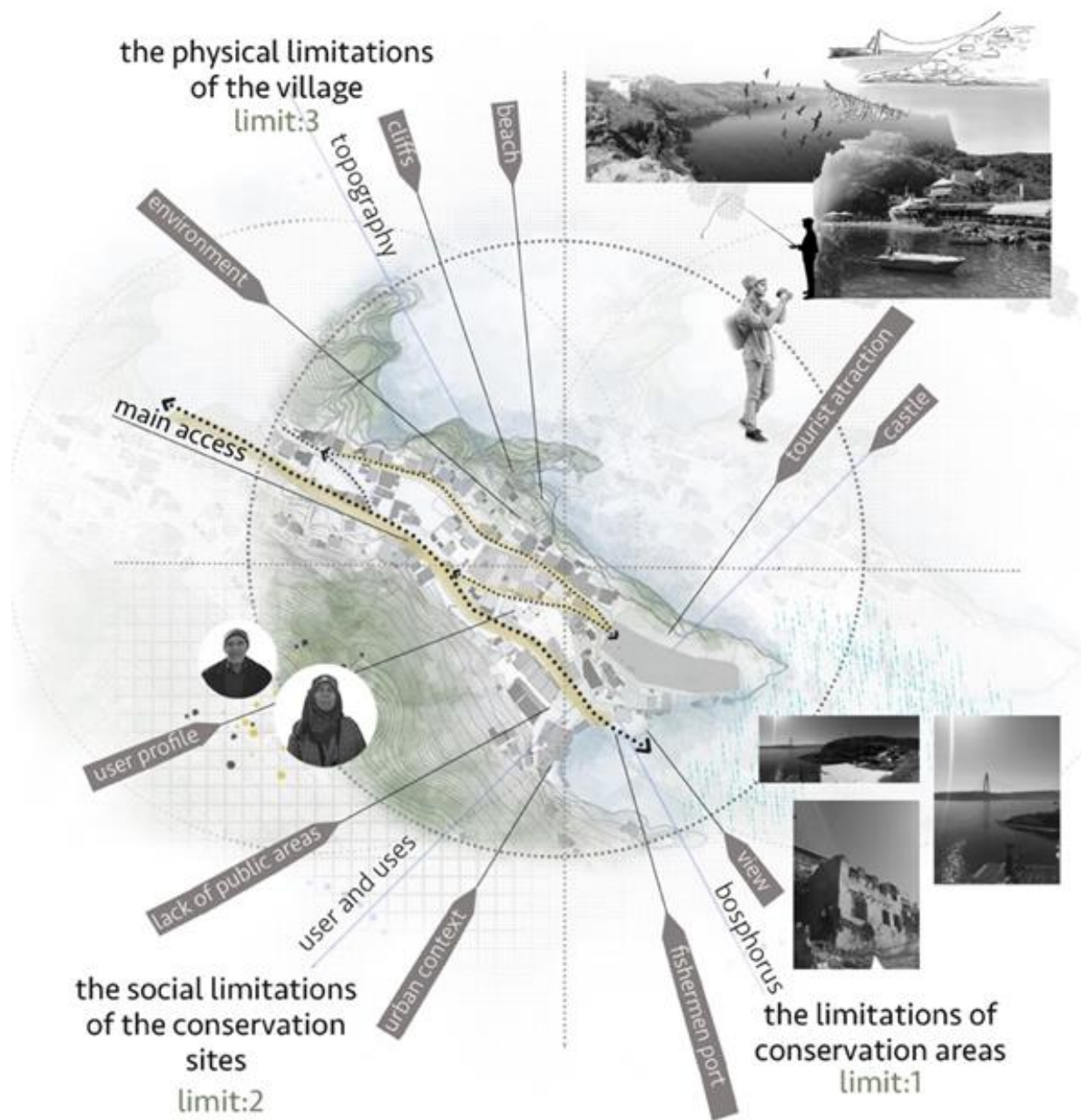


Figure 9. An example of Garipce's limits maps.

4.4. Determination of the Limitations

During the design studio, the students have provided strategies to overcome the limits of architecture in terms of post-conservation law in rural areas. After the preliminary information about the project area in terms of regulations

and limitations and a field trip, the students have completed the urban analysis process and developed first concept ideas. In this process, we as instructors have led the projects as it is discussed, in terms of limits of the village. The students have generated the analysis by

following three main steps: the determination of the limits, the determination of users, and the determination of urban voids in Garipce.

The first urban analysis period includes the process of designing urban maps to understand and evaluate the limits of Garipce. Along with limitations of conservation areas, social implications, and physical limitations of the village, which are determined earlier and expected to answer during the design studio, the students create Garipce Village's mind maps to determine the main limits, challenges, and scenarios that may arise. The cognitive and experiential mapping process has guided the students in the context of assimilating and embodying the realities of the village. Although, each map considers relatively different limits, with the overlap of all cognitive maps the main limits of Garipce have been exposed and they all have searched the main three limitations. Figure 9 is an example of Garipce's limits map which considers the main limitations along with conservation area, social implications, and physical limits.

After re-mapping Garipce Village with its limits, the students have worked on user scenarios for the village. As it is mentioned above, the construction regulations and conservation laws create social limitations for such places in the village's everyday life. To detect this situation, during the analysis process, the students have visited the town hall of Garipce and report the current social structure. As a result of this research process, it has been revealed that the majority of the village population consists of the elderly. According to the interviews with the village residents and the village headman, it was obtained that the young generation in the village did suffer from the lack of housing and it was determined that the most dynamic need of the village was housing for the future generations. The young generation also affected by the lack of social facilities, job opportunities, or education facilities. Therefore, it was determined that the protection of the village with the conservation law, actually caused social problems to the villagers, in terms of family life and social structure. In addition to

these implications, it is possible to suggest that the villagers consisted of a relatively closed community. The fact that the villagers have a closed attitude towards new settlers coming from outside strengthens this discourse. On the other hand, they express their concern that the younger generations cannot be accommodated in their villages; nevertheless, they do not want the village's profile to change with possible conservation law changes neither. Under all these conditions, it was concluded that it would be more accurate to determine some user profiles that can meet the requirements of the village or develop alternative scenarios for the existing users in the village. The realistic approach for user profiles is also considered as one of the design parameters arising from the limits of the village.

The third analysis step is to identify suitable areas for residential projects. In this step, students were expected to identify the urban voids in the existing residential areas of the village or mark the structures that are not worthy of protection and that cannot be used. According to this analysis, residential areas that can be designed in Garipce are covered in three groups: Existing unstructured residential area, Existing residential area, Existing built but unused residential areas.

Under the existing conservation law, the fact that no new housing can be built in the village and the rule about in case of a housing demolition, only building with public function can be constructed, constitutes important limitations for the determination of housing sites. These limitations that affect the process of determining the areas are in line with the determined limits of the village. User profiles determined for housing projects also affected the type and location of the housing area. Throughout the study, the students were reminded of the necessity of preserving the existing urban texture and developing the design with the least possible intervention. As a result, the three-step analysis process is thought to nurture students in terms of exploring the village's limitations and facts worth protecting. The students who argued that the protection

would not only be with construction prohibitions and the concept of protection could not be independent of the daily functioning of life started the design processes by drawing the boundaries of intervention to the village.

4.5. Design within and for limits

The students who evolved an attitude towards the village during the analysis process developed projects consisting of housing and

side functions that overcome the restrictions created by the conservation law and may have positive effects on the daily life of the village. 12 students have attended the Architectural Design Studio III course. The students have developed successful housing design projects with given approaches. The design proposals that these students developed during the course have analyzed according to their user and land chooses.

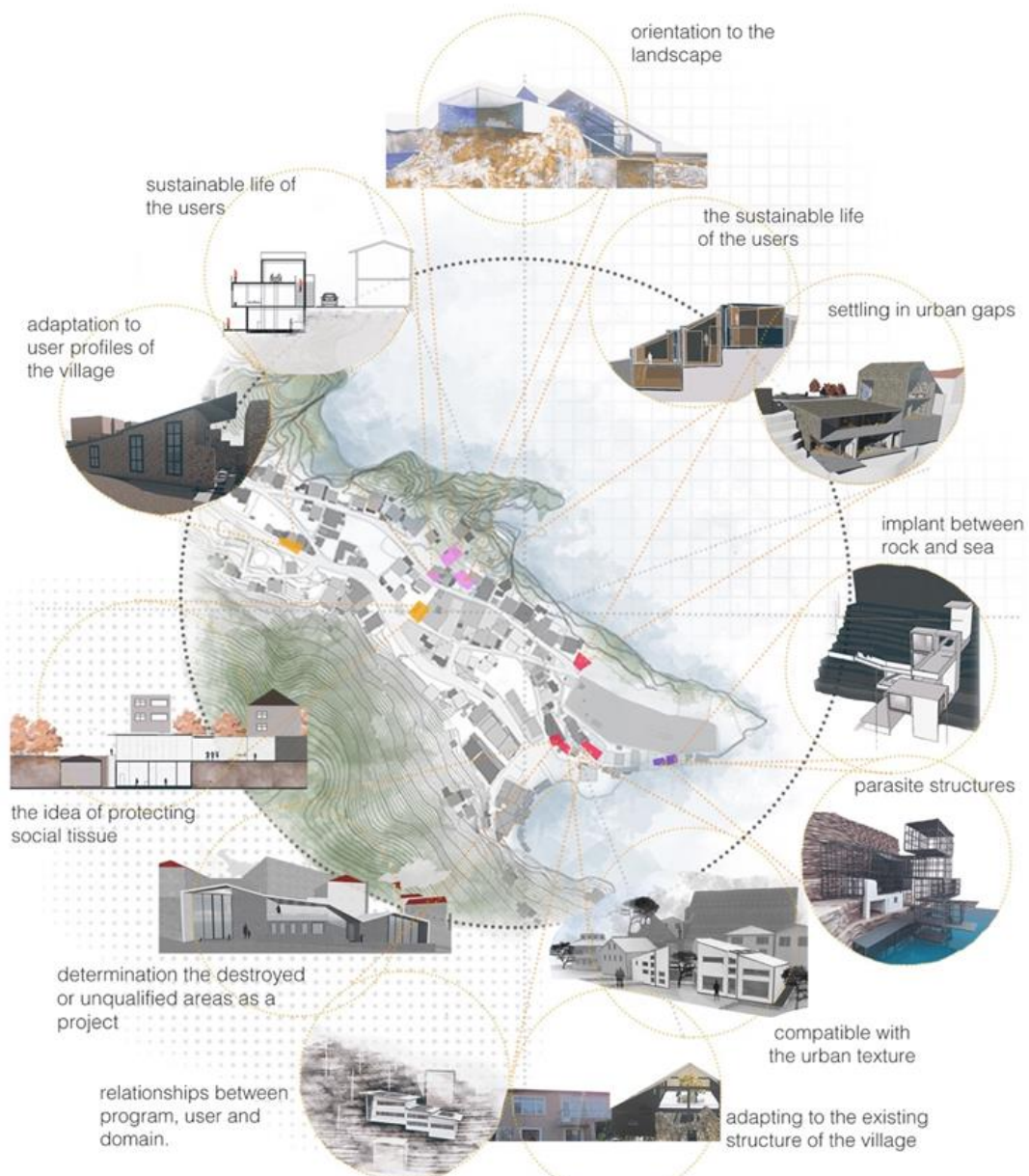


Figure 10. Student project locations and design proposals.

The projects of the students (Fig. 10) have evaluated according to their design strategies. These strategies are classified into two titles: Users and locations. The user profile and the location decisions show that how the students have developed new designs without damaging the village texture and how they have responded to the limits of the conservation laws. As can be seen from Figure 7, all of the student projects are located in urban spaces or areas of demolished / unused buildings. No student has intervened in the green areas of the village; all preferred to settle in the housing stock. Three projects that have scenarios with doctors and teachers settled in the village and projects with additional public functions such as education were located on the road that determined the main entrance line of the village.

The three of the projects inspired by real users living in the village have been considered together with sales and production units. It is seen that these projects with such user profiles are settled around Garipce Castle. In this approach, a visual relationship has been established with the castle, and physical contacts have been avoided. The two projects were placed in a way to establish a direct relationship between the sea and the castle. Both of the residence's places on the cliff on the sub-level of Garipce Castle. One of them belongs to the ornithologist and one to the fisherman. These uses, which require special relations with the sea and vista points, preferred to be the most symbolic place in the village; however, they touched the area using light structures. In the remaining three projects, there is an approach to the sea in the north to establish relations with other residences of the village. In these projects located on rocky cliffs, the phenomenon of privacy comes to the fore. These projects, which are a part of the silhouette of the village because they are in the residential settlements, follow the silhouette of the village with their roof forms. In addition to the formal approach, the dialogues they establish with the residences in the neighboring parcels are parallel to the general settlement decisions of the village. Therefore, it can be suggested that the silhouette of the village is preserved even in

areas where the intervention in the village is most visible.

As can be understood from these evaluations, user profiles have been selected from the village-fed or village-owned profiles, and projects have been developed in this axis. While responding to the limits of the village, it is seen that student projects that prefer to be invisible within the texture are also developed. In general, projects with profiles dominated by public functions are located close to the entrance of the village, and projects in which the housing function comes to the fore are located in the north. The projects with functions for those visiting the village have been gathered around the castle. All these settlement decisions have helped identify residential areas that will answer the village's needs if the conservation law changes or repeals.

It was determined as a prerequisite for the designs developed in the studio to meet the basic limits of the previously stated village. When 12 design projects (Fig. 11) are examined, the immediate answers given to these limits stand out.

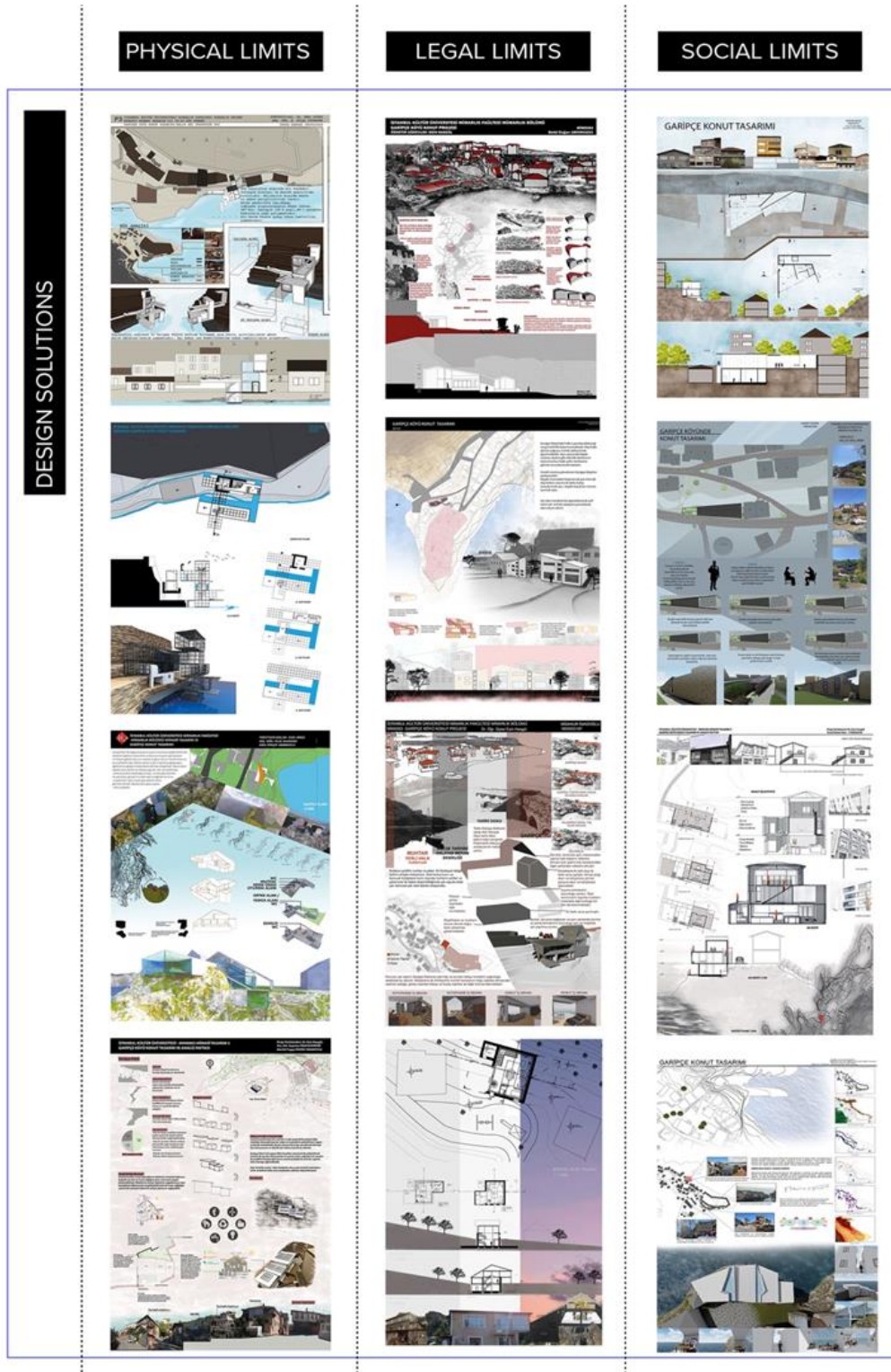


Figure 11. Students' design solutions presentations for the limits of the village.

As seen in Figure 12, we can briefly categorize the design solutions of students as follows:

Garipce. The design problem of second-year architecture students, the housing designs, is

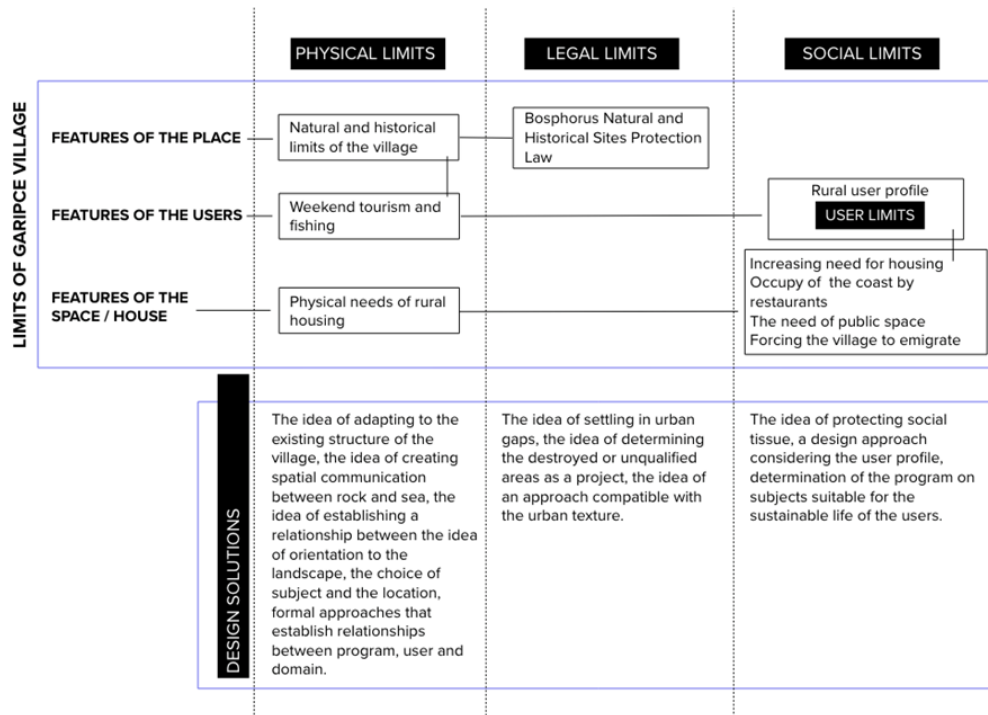


Figure 12. Students' design solutions ideas for the limits of the village.

Consequently, the evaluation shows that the students have used the limitation of the rural context and theoretical background of conservation law's limitation to provide projects that have less intervention as possible (Fig. 12). It has been observed that the students often have difficulties in the process of design, in terms of these limitation and user profiles of the site. On the other hand, these limitations have a major effect on design strategies, which also help students to finalize the concept ideas. At the end of the term, it is clearly seen in students' projects that have advanced the awareness of the conservation areas and had been developed with approaches that center the village life.

5. Conclusion

This article focuses on the concept of limit and its possible role in design education through realistic design scenarios of rural architecture in

asked to respond to the limits of Garipce, starting from the analysis process to the final design decisions. With the developed design approaches, the concept of limit has been discussed through alternative solutions for architectural intervention that are proposed to the conservation areas that are in danger of extinction due to the recent interventions.

In this study, conservation laws and the concept of "limits" that appears because of the laws had been reconsidered based on Garipce Village through the architecture design studio. Thus, the main idea of designing with the limits is to understand that the architectural design is exist only with and in limits. On the other side, as it is aimed, it was seen that certain limitations help designers to have creative solutions for each design problem. In this case study, we have seen that students tried to find responses to each limitation that they discovered, whether it was social, physical, or legal (conservation laws).

The architectural design studio's experimental environment helps the reframing the problems caused by conservation laws, such as social and environmental dysfunctions. With the result, the students have developed cognition about protection and construction relationships. In addition to this cognitive perspective, they have developed a project that responds to the daily needs in realistic scenarios to solve the limits. These design strategies that have created through limits of the village gives an opportunity to re-think in case of dramatic changes in the conservation laws, how can we design housing for villagers.

As seen in this case study, it has been observed that reading the design problem in an architectural design studio over the limits of architecture has an instructive role in terms of the approaches developed by the student. To summarize briefly, the implications of the experience of including architectural limits in the studio training strategy can be listed as follows:

- Incorporating limits as a concept into the architectural design studio enabled the discussion of design possibilities for conservation site areas.
- The concept of architectural limits supported students to develop a design approach by deepening their context reading.
- The act of designing housing "despite the limits" and "in response to the limits" has become a means of conveying the responsibilities and limitations of architectural design to the student.

The concept of "limit" transforms students' learning experiences in the design studio, in terms of context readings and developing an awareness of architectural design's effect on daily life. The experience of designing within multiple constraints such as the limits of working in the rural area, the limits of living in the conservation zone, the possibilities of architecture in the conservation zone, and the responsibility of architectural design to the environment, motivates the students and

prepares them for real design scenarios. Based on these results, reading "the limits of the architectural design" as an instructional tool in architectural design studios can be transformed into a design studio model proposal. In this way, the responsibilities and awareness of architectural design can be transferred to students through real scenarios starting from an early stage. By placing different conceptual limits in the architectural design problem, these teaching models can be reproduced.

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