

## Minimal life “structures”: A studio experience

Asst. Prof. Tuğçe Çelik<sup>1\*</sup>, Lect. Esra Arslan Güreşcioğlu<sup>2</sup>

<sup>1</sup>Ostim Technical University, Faculty of Architecture and Design, Department of Interior Architecture and Environmental Design, Ankara, Turkey.  
[tugce.celik@ostimteknik.edu.tr](mailto:tugce.celik@ostimteknik.edu.tr)

<sup>2</sup>Ostim Technical University, Faculty of Architecture and Design, Department of Interior Architecture and Environmental Design, Ankara, Turkey.  
[esra.arslan.gurescioglu@gmail.com](mailto:esra.arslan.gurescioglu@gmail.com)

\*Corresponding Author

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### Abstract

The necessity of the space to respond correctly to the user's wishes and needs is an unchanging phenomenon. Today, especially with the pandemic, differences in housing meaning are sought. With this current problem, minimal living spaces have been determined as the design studio subject of Ostim Technical University 2022-2023 Fall Semester. In this study, in the context of the suggestions developed by the students, the main motivation is to examine the meaning of the project designs and the residence; at the same time, it is aimed to discuss this studio experience. Within the scope of this study, the method, process, and end products of the studio are discussed. In this study, the changing meaning of the house and minimal living spaces were questioned by using the “document review” method, one of the qualitative research methods. The information obtained was analyzed by evaluating the results of the studio course. With this study, in which studio products with different user types and different functions are examined, it is concluded that the design of living spaces in small houses is very important for healthier solutions in comfort conditions, and it has been a very developing experience for the studio participants and executives.

**Keywords:** Architectural design, Design studio, Minimal living spaces, Housing, Design process

### Extended Abstract

**Introduction:** Design is a complex process, and designers manage this process by using their knowledge, experience, spatial imagination, and creativity. In this context, while analyzing certain parameters such as environmental design, analysis of the structure and its environment, user requirements, and function analysis, on the other hand, concept development proposals related to design are made. Architectural education uses its own unique approaches by combining design-oriented and studio-oriented methods with the aspects of different disciplines and arts that contribute to creativity. The environments where design alternatives are tried, design methods, and teachings are discussed and discussed most in architectural schools are design studios, which form the focal point of architectural education (Gökmen & Süer, 2003: 18-20). Although architecture schools have different visions and structures, design studios are almost without exception at the center of architectural education. In these studios, the creative/professional/technical dimensions of spatial production, as well as the social aspect, are emphasized through design problems accompanied by critical thinking. Of course, these emphases may differ according to the priorities of the studio, educational strategies and the prominent paradigms of the period. The relative element that highlights the “project subject that will protect the design problem” to be given to architecture students by eliminating other subjects is actually the capacity of the subject to overlap with a connotation that studio managers want to emphasize (Basa, 2010: 221). Architectural design studio education is a learner-centered, process-based system that gives the responsibility of learning to the individual (Oxman, 1990: 18; Christiaans & Andel, 1993: 59-60). In this study, Ostim Technical University 2022-2023 fall semester Design Studio 2 course process is examined. With the questioning and transformation of the meaning of the house, which is a current topic, minimal living spaces have been determined as the studio theme. The house is inspired by its environment and the culture around it, both formally and spatially. For this reason, it is not only a physical structure but also a place that should respond to different needs and requests (Rapoport, 1969: 28). With the pandemic, it is predicted that the residence will turn into a function such as the use of home-office with the long periods spent in the residence and the transfer of business life to the housing.

**Purpose and scope:** In this study, it is aimed to examine the effect of the structural approach, which was taken into consideration from the beginning of the design process, on the design by questioning the tiny house or minimal living spaces structures that emerged with today's minimalist and free lifestyle approach in the context of the meaning of the house transformed after the pandemic. In addition, this study aims to raise the awareness that the design of living spaces in small houses will affect the comfort conditions of people and to offer solutions for people to live in healthier environments within comfort conditions. The scope of the study is the project proposals studied in the Ostim Technical University 2022-2023 fall semester design studio.

**Method:** Within the scope of this study, the method, process, and end products of the studio, where different parameters, which create the design, such as structure, requirement program, and user profile, are experienced, are discussed. In this study, the changing meaning of the house and minimal living spaces were questioned by using the "document review" method, one of the qualitative research methods. In the design studio of the first semester of the second year, which constitutes the scope of the study, a design problem-oriented educational approach based on the students' understanding of the intricate relationship between public and private space. They scrutinized, analyzed and proposed different home-office structures through education. After analyzing the coastline of the designated area, Datça, the participants were expected to develop their own program proposals, concepts, considering the design context, and to seek answers to the minimal living structure problem with mixed-function proposals that are both housing and office. The first stage of the process was carried out entirely with individual critics, and in the second stage, the jury and individual criticism methods were applied together. The result products are discussed by evaluating the information obtained in this study with qualitative research methods.

**Findings and conclusion:** The educational process, which is focused on research and learning in the process by exploring, has allowed creativity and diversity in design approaches and has been a highly developing experience for the executives as well as the studio participants. In the studies carried out within the scope of the project course, completely different user types were described, different occupational groups were selected, different functions were solved, but the same needs were met. The houses are designed together with the cultural and environmental characteristics of the regions where the people living in them live. These data can be classified as natural and cultural data. Small square meters of houses are on the way to become lively and important parts of contemporary architectural production and daily life. Solving the housing structure, which is transformed by including working spaces in small square meters, also requires questioning on design. In addition, the inclusion of the structural approach in the design process makes a serious contribution to creativity in design. It is supported by the study that the structural model, which allows the design thought formed in mind to become visible in the third dimension with the experience of "learning by doing", is beneficial in making the information about construction systems more permanent and more understandable in design education.

**Keywords:** Architectural design, Design studio, Minimal living spaces, Housing, Design process

## INTRODUCTION

Design is a complex process, and designers manage this process by using their knowledge, experience, spatial imagination, and creativity. In this context, while analyzing certain parameters such as environmental design, analysis of the structure and its environment, user requirements, and function analysis, on the other hand, concept development proposals related to design are made (Adıgüzel & Özbek, 2012: 2). Architectural education uses its unique approaches by combining design-oriented and studio-oriented methods with the aspects of different disciplines and arts that contribute to creativity. Design studios are the environments where design alternatives are tried, and design methods and teachings are discussed most in architectural schools, which form the focal point of architectural education (Gökmen & Süer, 2003: 18-20). Although architecture schools have different visions and structures, design studios are almost without exception at the center of architectural education. In these studios, the creative/professional/technical dimensions of spatial production, as well as the social aspect, are emphasized through design problems accompanied by critical thinking. Of course, these emphases may differ according to the priorities of the studio, educational strategies and the prominent paradigms of the period. The relative element that highlights the "project subject that will protect the design problem" to be given to architecture students by eliminating other subjects is actually the capacity of the subject to overlap with a connotation that studio managers want to emphasize (Basa, 2010: 221). What actually happens in the design studio is that the student develops a solution with investigating, identifying, or even understanding the problem to be solved (Salama, 2021).

The architectural design studio is the main application area of architectural education and is at the center of architectural education with its holistic structure that combines courses such as basic design, technical drawing, and plastic arts. The project studio is at the heart of the training program in design-based disciplines. Each student understands and makes sense of the studio process, including input and information. In addition, the approach and method of the studio executive academician and the perspective of the institution are also effective in different perceptions and interpretations. However, it is possible to identify some basic features of design studios (Adıgüzel & İncirlioğlu, 2010: 4-6). Uluoğlu (1990), in her study on architectural design studios, determined these features as follows:

- The design studio is an indispensable part of architectural education.
- Design is learned by design, no matter whom it is learned from.
- One-on-one interviews and critical giving are a form of education in the design studio.
- Since the knowledge of how to design is learned from the executive, the executive assumes the main role (Uluoğlu, 1990: 17-18).

In the architectural design studio, the student is expected to embody their intellectual activity, which can be expressed abstractly, by externalizing it with visual expression techniques and conveying it with representative expression languages (Purcell & Gero, 1998: 389-390). In this context, instead of externalizing and presenting the information directly to the student, it is made available to the student actively through design experiments. Thus, the individual gains the ability to transform concrete and singular situations into abstract and general situations. The aim is not to store the information by perceiving only at the sensory level, but to pass it through the cognitive filter of the individual and cause a change in his thinking and behavior. Design education aims to target the production of new knowledge and to trigger the creative process with the re-presentation of knowledge in mind (Ayyıldız Potur & Barkul, 2010: 739). For this purpose, the key concept of the design studio is communication (Ward, 1990: 10-16; Heylighen et al., 1999: 211-235; Demirbaş & Demirkan, 2003: 437-456). An architectural design studio is an environment where people such as project coordinators, students, guest jury members invited to the studio and speakers communicate with each other. By providing social interaction between all these people in the studio, thoughts are freely expressed and shared (Coyne et al., 1994: 121). Therefore, the studio is an environment where students learn from each other, as well as from the critics of the studio executive and guest judges and speakers, if any, where they experience the process of thinking and designing.

Architectural design studio education is a learner-centered, process-based system that gives the responsibility of learning to the individual (Oxman, 1990: 18; Christiaans & Andel, 1993: 59-60). As part of the course, considering that there is a diverse mix of students who need to look at the entirety of the design problem, its objectives and possible outcomes, collaborative studio learning offers multiple perspectives on the problem at hand which are more easily introduced the given design exercise (Qureshi, 2019). This study examines the Ostim Technical University 2022-2023 fall semester Design Studio 2 course process. With the questioning and transformation of the meaning of the house, which is a current topic, minimal living spaces have been determined as the studio theme. In this course, besides the training for the development of basic knowledge and skills of spatial design, studies were carried out on the concept determined in order to create an identity in spaces, reveal their own architectural style and find solutions to design problems. In this context, students were expected to be able to look at the design problem from different angles, analyze it in different ways, and question it in multiple ways during the studio process. As a result, the diversity and diversity of the design approach in the studio structure enabled the experience of a process that nurtures creativity. It is understood that studio education, which has years of meeting with design and loves the job of design, should be designed with a creative focus in a way that will include diversity, provide critical thinking, and allow the student to overcome their limits by discovering.

## **THINKING THE TRANSFORMING MEANING OF HOUSING**

The house is inspired by its environment and culture, both formally and spatially. For this reason, it is not only a physical structure but also a place that should respond to different needs and requests (Rapoport, 1969: 28). With the COVID-19 pandemic, users from all age groups have started to spend more time in the house

than usual, and their relationship with the house and living space has strengthened, even if it is mandatory. Although the measures in the pandemic started with “distance social life”, restrictions were imposed on social activities to be held in common areas in the city, and full-time quarantine periods were experienced. At this point, the function assigned to the residence has also changed, and education and business life have also been moved to the residence. Almost all of daily life is spent in the house. Housing users have started to transform the house by necessity and have started to produce spatial solutions according to social distance rules and these new functions. As a necessity of this new need, architects have started to develop a new design concept for housing (Özdevecioğlu et al., 2022: 441).

Individuals noticed the deficiencies in their houses when they spent a long time in the house, and the importance of house design increased. In addition to the shortcomings, a new function has been added to the residence, the offices have been moved to the residence. Even though the quarantine processes are over, it is predicted that the process of working from home will continue and more people will work from their homes (Megahed & Ghoneim, 2020: 61). As a result, the consequences of the pandemic and the risk of recurrence or the possibility of new outbreaks make it necessary to study and implement a new concept in housing (Sipahi & Yamaçlı, 2021: 375).

While the correct organization of the spaces in residence, such as working, eating, and sleeping, is always important for architecture, it has been seen that the proper space organization is much more important in the pandemic than these units are planned in the required square meters, allow more functional uses. Especially in open plan examples such as open kitchen solutions, with the increase in the need for personal space, areas defined with separators were needed and solutions were brought to this need by the users. The increase in the function in the house and this process that the home-school-office life must pass in a single place has shown that the needs and wishes of all users should be planned in the housing design. From now on, the housing design will consider study/meeting spaces suitable for video calls, teleconferences, and youth/children’s rooms in the classroom function where life lessons are followed. Criteria such as sound insulation and indoor air quality, which are more sought after in buildings such as offices and schools, have become sought after in residences that have these functions, along with the epidemic and pandemic process. It will be possible to solve the problems that will arise by making use of smart home systems, and at the same time, transforming / adaptable / changing flexible space solutions should be preferred for multifunctional spaces (Güney Yüksel, 2022: 96). Creating the design parameters of high comfort level, correct space organization, flexible, simple spaces that can be transformed without requiring high cost ensures sustainability in the interior of the house (Güney Yüksel & Seçer Karıptaş, 2019: 27-28). Sustainability is about ensuring continuity. Today, protecting and maintaining natural resources has become necessary for people (Filiz & Hacıhasanoğlu, 2011: 76). Flexibility is one of the most important parameters in terms of sustainability in space design and extends the life of the building. It is possible to make designs suitable for different functions with flexible spaces that can offer solutions to changing/transforming/increasing or decreasing needs, and spaces that grow or shrink can be separated or integrated with the help of movable divider systems. Thus, designs will be made to solve new needs emerging during the pandemic (Güney Yüksel, 2022: 91). In the light of this information, it is predicted that the house will turn into a function such as the use of home-office, and it is thought that the spatial transformations that occur with the change of its functional use ensure that the comfort conditions of the users are maintained and they remain connected with the world.

## **METHOD**

Within the scope of this study, the method, process, and end products of the studio, where different parameters are experienced, are discussed. In this study, first of all, the changing meaning of the house and minimal living spaces were questioned by using the “document review” method, one of the qualitative research methods. In the design studio of the first semester of the second year, which constitutes the scope of the study, a design problem-oriented educational approach based on the students’ understanding of the intricate relationship between public and private space. The result products of the studio were discussed by evaluating the information obtained in this study with the “content analysis” method, one of the qualitative research methods.

The main purpose of this study is to share the experience of a design studio that includes the architectural design process. In this direction, the main findings obtained in the research are revealed through the tiny houses designed within the scope of the design studio course, which is the scope of the study. Along with this, this study aims to examine the effect of the structural approach, which was taken into consideration from the beginning of the design process, on the design by questioning the tiny house or minimal living spaces structures that emerged with today's minimalist and free lifestyle approach in the context of the meaning of the house transformed after the pandemic. In addition, this study aims to raise awareness that the design of living spaces in small houses will affect the comfort conditions of people and to offer solutions for people to live in healthier environments within comfort conditions.

## **FINDINGS AND RESULTS: MINIMAL LIFE “STRUCTURES”**

Although the meaning of the structure differs in various disciplines, it is basically the integrity formed by the parts. In this integrity, the correct establishment of the part-whole relationship is important for the design process. Because the right design depends on the design of the form that will provide the desired functions and the structure that will sustain it (Günel Ertaş, 2007: 13). Structure is derived from the Latin word “stuarum” and is used to mean to build (Demirkan, 2006: 12). While Hasol (2019) defines structure as the system that will sustain form, Torraja (1958) emphasizes that structure is directly related to the form in his book *The Philosophy of Structures* (from Hasol, 2019 and Torraja, 1958, cited by Ertaş & Sönmez, 2018: 110). Vitruvius (2005), in his work titled *Ten Books on Architecture* states that architecture should be considered as a whole in design, although he bases architecture on three pillars: strength, beauty and usefulness. Similarly, French architect Eugene Emmanuele Viollet-le-Duc stated that architecture consists entirely of structure and is one of the main components of architecture (İpek, 2014: 1).

The discourses of all these researchers about the structure show how the structure impacts its relationship with architecture and interior architecture. One of the most important features of the structure is that it creates space (Özcan, 2017: 107). The importance of structure in architecture and interior architecture, generally defined as the art of creating space, begins with the education process. Because the idea that all the components and elements that the space contains reflect the interior identity that will form the parts of the whole should be conveyed to the students receiving vocational education (Ertaş & Sönmez, 2018: 112).

The necessity of two and three-dimensional representation as a whole in the architectural education process is at the common denominator. It is especially important in terms of conveying the structure, which is one of the basic elements that make up the architectural structure, accurately and understandably in the education process. Generally, while the formal and spatial approach is prioritized in the design process of architectural education, the structural approach remains in the background (Maden, 2020: 110). This study aims to examine the effect of the structural approach, which was taken into consideration from the beginning of the design process, on the design by questioning the tiny house or minimal living spaces structures that emerged with today's minimalist and free lifestyle approach in the context of the meaning of the house transformed after the pandemic. The Structure (Figure 1, Figure 2) is an important design element in the project. In addition, the targeted educational/learning outcomes of this course are,

- Addressing the relationship between space, user, function and environment with its conceptual dimensions,
- Gaining the ability to make, present and defend original designs,
- Analyzing the existing environment to be designed, identifying its problems and developing a scenario for its solution,
- Comprehension of activity-space, user-space, private space-public space relations,
- Gaining the ability to research the functions to be designed, to compose with materials and models, to construct, to express with two- and three-dimensional tools.



**Figure 1.** Student (Rania El Wartiti) structural experiment, Student (Nessreen Elshazly) structural experiment



**Figure 2.** Student (Büşra Arslan) structural experiment

Since the beginning of the design studio project of Ostim Technical University Faculty of Architecture and Design 2nd year students, the tiny house/minimal living spaces design, the relationship between structure and structure has been constructed with a holistic perspective in the second and third dimensions. In order to make the structure's place in the design process speakable and to question the meaning of the house, first of all, "tiny house"/minimal living spaces, which are popular among today's housing types, were chosen as the project subject. In addition, the reason for choosing the tiny house building can be listed as being at the 2nd class project level, having a small scale where the structural design can be constructed comfortably. Finally, the basic information of the construction system has the feature of having a similar building. The culture of consumption, which started with the Industrial Revolution, caused a break in the meaning of housing worldwide. However, technological developments have also affected the construction system of the house (Sungur & Aydın, 2021: 400). Considering the possibilities provided by modern technology, people-oriented spaces that offer ease of use form the basis of the tiny house structure. The basic approach in small houses, called tiny houses, is shaped by the philosophy of life that adopts the idea of minimalism and freedom and foresees a social life beyond housing (Arslan, 2021: 41-42).

While it contains the lifestyles, cultural characteristics, behaviors, environmental preferences, images, time and space relations of the individuals living in the houses, it also reflects the tendency of people to prove and express themselves and their personality traits through design and equipment elements (Gür & Geçkin, 1996: 75-82). For this reason, completely different user types have been described in the studies conducted within the scope of the project course, and different occupational groups have been selected.

### Method and Process

The most important part of architectural education in terms of curriculum focus and time spent by students is architectural design. It is in the design studio that students are expected to bring together knowledge from the different disciplines to inform the development of their architectural designs (Nicol & Pilling, 2000). The complex relationships among different agents and mechanisms in design studios require more than pure team building of formal collaboration methods. Rather, carefully planned setups with the applications of multi-

layered, diversified teaching strategies provide ample opportunities for exemplar collaboration experiences and creativity (Park, 2020). A problem-oriented educational approach was adopted based on understanding the intricate relationship between public and private spaces and the architectural design activity as a whole by the design studio students, who are in the first semester of the second year. They examined, analyzed, and proposed different home-office structures through education. On the other hand, studio participants researched world-class applications and shared them in the studio environment. After analyzing the coastline of Datça, which is the designated project area, the participants develop their own program proposals (Figure 3), and concepts (Figure 4), taking into account the needs of the context, and seek answers to the minimal living structure problem with their mixed-function, housing and office proposals. The first stage of the process was carried out entirely with individual critics, and in the second stage, the jury and individual criticism methods were applied together.



Figure 3. Student (Rania El Wartiti) concept and needs program, Student (Osman Arif Tunç) concept and needs program, Student (Asil Yalnız) concept presentation board



Figure 4. Student (Nessreen Elshazly) concept presentation board

### A Section of Result Products

Different types of housing have recently met the need for shelter. These housing types differ according to the needs and characteristics of the people. While designing small houses, the needs of people should be well determined. The changes in family, work and education areas that occurred during and after the Industrial Period also changed the needs of the residential users. After this period, spaces where individuality is at the forefront and where single or two-person lives are formed, have emerged (Bulhaz, 2014: 18-19).

It is also necessary to consider how to transform small square meters of living spaces into ergonomic, comfortable and productive spaces and how to solve smart living spaces that can provide their own energy. Built-in architectural components, double-functional fixed or modular furniture, gallery living spaces are just a few of the problems that need to be solved. The solutions that can be created to provide maximum functionality in minimum space are almost endless.

### *Design decisions*

The residences designed within the scope of the project have different design parameters. Firstly, settlement decisions on the land were considered and topographic data were analyzed. Analyzing the topographic data well and designing houses that comply with the necessary analyzes will create an aesthetic phenomenon in terms of architecture and ensure the emergence of houses that are in harmony with the environment. Non-adaptive dwellings require large earthworks, many foundations and retaining walls. This house will both require a lot of cost and will create a feeling of not belonging to its environment, as it does not adapt to the environment. The land's slope angles should be considered while designing the house. If a residence is designed in an area with a high-level difference, spaces should be created at different levels. There are elevation differences on the plot given in Datça, and second-year students were asked to consider this (Figure 5).



**Figure 5.** Student (İkbal Lina Kaya) project, using the slope for settlement on the land, Student (Osman Arif Tunç) project, using the slope for settlement on the land

Another feature that should be evaluated together with the topographical situation while designing the structures is the location and the view (Figure 6). If there is a natural view of the existing land, living and working areas should be faced with this facade. Thus, an aesthetic result will be obtained for users.



**Figure 6.** Student (Buğra Mert Değerli) project, orientation toward the view

Changes in the needs and characteristics of individuals and societies in housing designs have also led to changes in design criteria. Reasons such as the change of time and the differentiation of needs have also led to the change in design data. Especially after the pandemic, with the transfer of working life to the residence, special areas related to the areas of interest were created within the spaces. More flexible planned spaces have emerged. For example, people felt the need to create a small work area in their living or sleeping areas (Figure 7). Thus, the concepts of flexibility and variability in residences have gained importance over time. In this context, students experimented with flexible plan solutions in their projects (Figure 8, Figure 9).



**Figure 7.** Student (Akif Harun Kaçar) project, workspace



**Figure 8.** Student (Ömer Can Derebaşı) project, flexible plan solution experiment



**Figure 9.** Student (Nessreen Elshazly) project, flexible plan solution experiment

Different design solutions came from the students who thought about the inclusion of work areas in the housing. Different functions were solved in the design proposals received from the students who designed living spaces for the concepts they chose and for different occupational groups (Figure 10, Figure 11, Figure 12, Figure 13, Figure 14), but answers were sought for the same functions.



Figure 10. Student (Ayşegül Elibol) project, designed for a pianist



Figure 11. Student (Buğra Mert Değerli) project that proposes a workshop on the ground floor and a living space on the upper floor

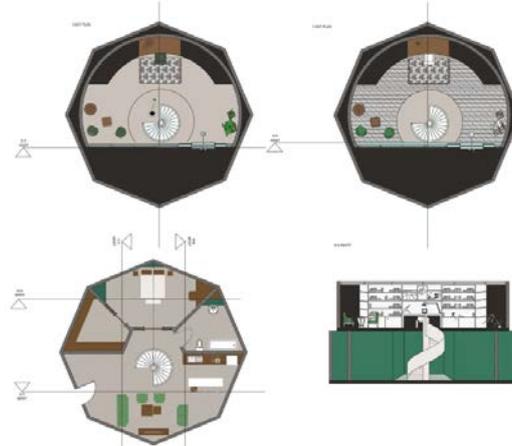


Figure 12. Student (Dilara Pınarbaşı) project that proposes a living space on the ground floor and an observatory on the upper floor

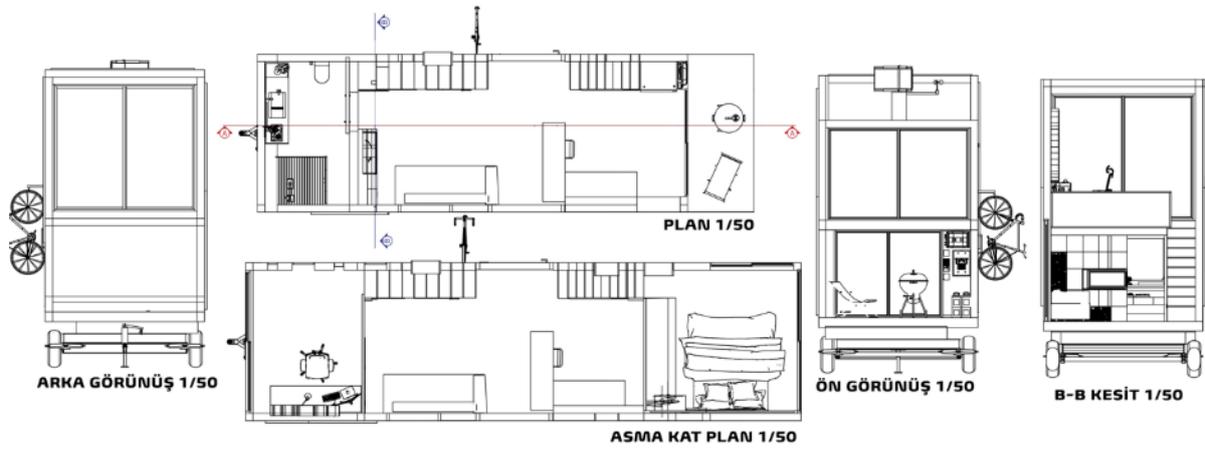


Figure 13. Student (İlayda Tupa), a workspace-housing combination proposal designed for a writer



**Figure 14.** Student (Ensar Bekir Arslan) project, music studio-housing association proposal with flexible plan solution

Students are freed in their project proposals; only certain limits and restrictions are given. One of the suggestions in this direction was a moving tiny house (Figure 15). The study obtained volumes at different levels in the interior by combining the minimalist life philosophy discussed in the design phase with natural light. The volumes at these different levels were used as spaces with different functions. With the portable house philosophy, the project was handled with the decision to meet the user's different needs by using a minimum of space. In order to move the house, light construction was preferred as the construction material.



**Figure 15.** Student (Yazgi Cemre Tuygun), a proposal for a moving tiny house

## CONCLUSION

Housing means a unified expression of communication, interaction, space, time, and meaning. On the one hand, it reflects the characteristics of the culture or ethnic group and lifestyle, behavioral rules, environmental preferences, time and space classification, on the other hand, it reflects the personality and privilege of the individual with the design by carrying the identity information of the user. Today, small square meters of

residences have become lively and important parts of contemporary architectural production and daily life. Solving the housing structure, which is transformed with the inclusion of working spaces, in small square meters, also requires questioning on design.

A lot of data is used when designing small houses. The houses are designed with the cultural and environmental characteristics of the regions where the people live. These data can be classified as natural and cultural data. When the data in housing design is considered natural and cultural, environmental factors such as climate, topography, natural resources are considered as natural determinants. Cultural data is a person's lifestyle, family and tradition thought and belief, socioeconomic, and local language.

In the studies carried out within the scope of the project course, completely different user types were described, different occupational groups were selected, different functions were solved, but the same needs were met. There are many gains that students can achieve within the scope of the design studio. Some of them can be said to be able to teach about designs that can offer personal choice, and to be able to design furniture where functionality is at the forefront. In this educational experience, in which learning environments based on teamwork, cooperation and interaction are tried to be created, and which aims to highlight the student as an active actor, many discussions have been held in the intersection of the housing, public life and architecture. In this course, in addition to training for the development of basic knowledge and skills of spatial design, a project is determined for the purpose of creating a coherent design idea, establishing a form-space relationship, creating an identity in spaces, creating its own design language. In addition, it is aimed to examine the effect of structural knowledge and approach on design.

Including the structural approach in the design process significantly contributes to creativity in design; the structure, which forms the basic setup of architectural and interior design, is primary in design. It is supported by the study that the structural model, which allows the design thought formed in mind to become visible in the third dimension with the experience of "learning by doing", is beneficial in making the information about construction systems more permanent. In addition, the dissemination of the idea that studio lessons should be integrated with building lessons, such as structural knowledge in architecture / interior architecture education, is among the results of the study. The educational process, which is focused on research and learning by exploring, has allowed creativity and diversity in design approaches and has been a highly developing experience for the executives and the studio participants. In addition, this study aims to raise awareness that the design of living spaces in small houses will affect the comfort conditions of people and to offer solutions for people to live in healthier environments within comfort conditions.

#### **Authors' Contributions**

The 1st author contributed 60%, and the second author contributed %40.

#### **Competing Interests**

There is no potential conflict of interest.

#### **Ethics Committee Declaration**

It is not a study that requires ethics committee approval.

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### Figure References

**Figure 1-15:** Authors archive, 2023.

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### Authors' Biographies

**Tuğçe Çelik** received her B.Arch in Architecture from Gazi University, Faculty of Architecture (2012). Earned her MSc. And PhD. degree in Architecture from Gazi University, Faculty of Architecture (2015-2020). Started architecture in 2012 as a co-founder in her architectural office. Currently works as an Assistant Professor at Ostim Technical University. Major research interests include architectural design, computer aided design, design and art history.

**Esra Arslan Güreşcioğlu** received her B.Arch in Architecture from Gazi University, Faculty of Architecture (2012). Currently works an architect in her own architectural office and at the same time as a Lecturer at Ostim Technical University. Major research interests include architectural design, design and art, sociology and architecture.