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A multidisciplinary design exercise: Myndos Excavation Site

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Abstract

This paper describes a multidisciplinary educational design workshop carried out at the 4000-year old Myndos archeological site in Bodrum, Muğla, Turkey. The workshop, which was a collaboration between Architecture and Archeology Departments at Uludağ University, involved the design of a lightweight structure to be positioned on the archeological excavation site. The aim of the "Lightweight Structures, Mobile Architecture, and Archeology" workshop was to create an innovative, interdisciplinary environment for participants to creatively solve design problems in a limited time.

Instructors from the Architecture Department and the Archeology Department guided 13 architecture students, and 7 archeology students through the workshop. The hypothetical structure was to be utilitarian, and demountable. It should also not damage the ground it would touch. Decisions on scale, structural choice, the choice of materials were left to the students. Informative seminars on the excavation site itself; lightweight structures; architectural patterns, mapping, and visualization; as well as architectural representation were given during the 5-day exercise.

Among multiple benefits of the workshop some that stood out were: (1) students participated in a complex creative problem solving process, (2) students learned to work under time constraints, (3) students familiarized themselves with one another's profession, (4) students learned to appreciate dissimilar viewpoints, (5) students were able to visualize their designs in the context of the built environment, and (6) students were able to test and share their ideas with local residents.

In addition to these benefits, suggestions for the implication of this workshop in other educational fields are discussed.

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Keywords: architectural education; design education; design workshop.

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1. Introduction

The "Lightweight Structures, Mobile Architecture, and Archeology Workshop" took place between 25-29 June 2012, on the archeological excavation site of the Myndos antique city. The workshop was a collaboration between Architecture and Archeology Departments of Uludağ University (Figure 1.a).

Today, Myndos is located in the vernacular, seaside town of Gümüşlük, in Bodrum, Muğla. Due to the unique historical characteristics of its built environment and mostly preserved natural habitat, its population increases during the summer months, as domestic and foreign tourists visit the touristic retreat alongside Gümüşlük's local residents.

Archeological excavations of the antique city have been carried out by the Archeology Department of the Uludag University since 2009 (Figure 1.b.). Historically, Myndos was one of the shore cities of the Karia region in ancient geography. In his book titled Geographika, Strabon of Amasya, an explorer of the 1st century B.C., described the Termerion Cape occupied by the people of Myndos, following the capes of Astypalai and Zephyrion (Strabon, 2000).





Fig. 1. (a) Myndos, Gümüşlük, Workshop 2012 (Photo credit: Taneli). (b) Asar Island, Myndos, 2012 (Photo credit: Kırlı).

The earliest information about the city appears in a text by the 5th century B.C. historian Herodotus. Herodotus mentioned that Myndos provided ships to join the campaign of Nakşa under the command of Megabates in 500 B.C. While Herodotus did not mention the number of ships joining the battle, he referred to one event that occurred on a Myndos ship (Gündüz, 2008). Additionally, information about the past of Myndos can be found in the text "Histories" by Polybius. Polybius mentioned that during the Lade battle of 494 B.C., the Rhodos ships reached the shores of Myndos before arriving at Kos Island; and that they had to anchor at Myndos Harbor overnight (Polybius, 1889). The ruins of Myndos surviving through history are mostly of the once modern city constructed with the aid of Karia's satrap (governor) Mausolos. Historically, Myndos was of importance due to its strategic location as a point of defense against enemy attacks originating from the Aegean Sea to the capital Halicarnassus. Furthermore, it was once on the route of the Mediterranean shipping trade, which today makes the site an important center for archeological underwater research (Şahin, Gündüz, Aslan, 2007).

2. Architectural Design Education and Workshops

The role of the workshop in architecture education cannot be overemphasized. To elaborate, a concise definition is provided by Brooks-Harris & Stock-Ward (1999, pg.6): *"A workshop is a short-term learning*

experience that encourages active, experiential learning and uses a variety of learning activities to meet the needs of diverse learners."

According to Fleming (1997, in Brooks-Harris & Stock-Ward 1999), the focus of a workshop is on developing competence, utilizing interactive learning opportunities that emphasize hands-on practice in small groups through practical and intensive interaction. Unlike typical classrooms, the workshop resembles the design studio, which according to Dutton (1991) is an 'active site' that calls upon analytic, synthetic, and evaluative modes of thinking since it involves activities such as drawing, model making, conversation, and debate. Much of the process described above relies on an environment that fosters creativity, while allowing participants to generate new ideas for the built environment that effectively take into account functionality and aesthetics simultaneously (Yurtkuran et al. 2010).

The goals of the "Light Structures, Mobile Architecture, and Archeology Workshop" are (1) to contribute to the skill set of architecture and archeology students to engage in group work in an interdisciplinary workshop environment, (2) to properly identify the socio-cultural and architectural problems and potentials of the historical Gümüşlük settlement in a limited time, (3) to create architecturally viable mobile objects with light structures through a collaboration of the fields of architecture and archeology, (4) to produce future-oriented, potentially applicable projects for the Myndos excavation site, and (5) to discuss the resulting designs in a jury comprising workshop coordinators, local residents, and local government officials, thus initiating communication with the participants.

A five-day program containing seminars, city walk-throughs, and design studios was scheduled to accomplish the aforementioned purposes. Twenty students enrolled in the Architecture and Archeology programs during the 2012-13 school year, participated in the workshop under the guidance of academics from both departments. Students were randomly assigned to one of two groups, each with an equal number of architecture, as well as archeology students, to collaborate during the workshop. The workshop took place on the grounds of the Excavation House of the Myndos Antique City. Participants lodged in facilities in nearby Gümüşlük.

3. Process of the 'Lightweight Structures, Mobile Architecture, and Archeology Workshop'

The process of the workshop began with the arrival of the participants to the site via their own choice of transportation. Workshop facilitators made a deliberate choice of requesting participants to use individual means of access to the site. This allowed the participants to experience the site, its surroundings, and the broader geographical landscape individually, allowing for varying encounters in both mode of transportation and direction of approach. Participants shared these experiences during subsequent group work, thus expanding the collective understanding of the area.

3.1. Day 1: Problems and Potentials | Seeing-Comprehending

The purpose of the first day of the workshop is for the students to share intuitions, experiences, and observations related to the site with other participants, minus the guidance of the facilitators. This atmosphere of free communication allows for the problems and the potentials related to the area to be discussed.

Following the participants' arrival at the site, their settlement in the lodging, and registration, an amount of time was allocated for free observations. Participants initially experienced the surroundings through travel to the location, and successively through immersion into the local architectural fabric. Subsequently, the first seminar "Gümüşlük and Archeology" was presented. The presentation covered the history of the antique city, its geographical characteristics and importance, lifestyles of its residents in various eras, mechanisms of regional governance, and the reactions and approvals of the inhabitants to the existing political climate. Additionally, comprehensive information was provided regarding the city.

Seminars and informative discussions were preceded by individual immersion to the site and free communication with locals to permit untainted first impressions. Consequently, participants were able to compare their personal experiences with that of formal lectures and thereby identify contradicting positions.

Following the completion of the first seminar, participants were asked to complete a series of tasks: (1) to experience the site through sketches by taking into account the information provided during the seminar, (2) to take notes regarding their observations of the city and its inhabitants, (3) to communicate with residents regarding their perceptions of the city, and (4) to document their surroundings through snapshot photography. A relatively short time of 180 minutes was allocated to complete these tasks. This time constraint created a suitable environment for the participants from archeology and architecture disciplines to get acquainted, and for the rapid exchange of information.

Following the completion of the aforementioned tasks, students gathered at the excavation house, favored as the workshop setting. Work groups prepared short presentations describing their observations, experiences, photographs, and interviews with local residents. Student presentations created an environment for discussion. Finally, workshop facilitators clarified the concepts of "problem" and "potential" constituting the main problematic of the workshop, asking the participants to reevaluate the information they collected in light of these concepts.

3.2. Day 2: Multiple-perception | Comprehension

Day 2 commenced with a studio. The goals of the program for the second day were; (1) to allow for information and ideas stemming from the experience and informative sessions of Day 1 to take shape in a studio environment, (2) to have participants perceive new problems and potentials as group members share their experiences, and (3) to allow the design to develop in a different direction, to advance, and to change.

The structure described above is analogous to Kolb's experiential learning theory (Figure 2). Kolb (1984) contends that learning is best conceived as a process, and not in terms of outcomes. The learning process allows for ideas to be "formed and re-formed through experience," and does not consider them to be absolute or indisputable (Kolb, 1984. p.26). According to Kolb, experience has a fundamental role in the learning process. The cycle involves four adaptive learning modes: concrete experience, reflective observation, abstract conceptualization, and active experimentation (ibid. p.40). Kolb (1984, p.41) further delineates learning as a 'process whereby knowledge is created through the transformation of experience.' Kolb's experiential learning theory guided the structuring of the program of the second day of the workshop to focus on comprehension.

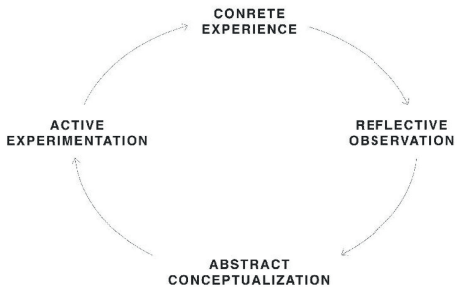


Fig. 2. Experiential Learning Theory (Based on Kolb 1984. p. 42)

Brooks-Harris & Stock-Ward (1999, p.10) identify three key tasks in developing a successful workshop; (1) "understanding workshop participants", (2) "developing a comprehensive workshop design that addresses the

topic for a particular group of participants within a particular context", (3) "facilitating the workshop in a way that promotes active learning". The authors (1999, p.11) further contend that Kolb's Experiential Learning Theory can effectively aid in developing each one of the three tasks. Kolb's learning styles assist in understanding workshop participants, and their individual learning needs and preferences. Learning processes, as described by Kolb, facilitate establishing adaptable learning activities catering to different types of learning. Finally, Kolb's four basic learning processes can advise respective skills for workshop facilitation.

At the outset of the studio exercise, participants were asked to transform the excavation house premises into a work environment suitable for them. Following the configuration of the work environment, members of individual groups discussed the data they collected on the first day. Participants critically evaluated the data in light of the concepts of problem and potential, and subsequently determined the problem and/or potential they intended to address.

During the studio exercise, participants focused on creating products, due by the end of the day, which would convey the topics they had discussed earlier. These products can be summarized as sketches, written documents, and critically evaluated photographs. Participants of differing educational backgrounds shared their individual presentation skills to create instruments for conveying effective messages.

In the second part of the studio exercise, 90 minutes were allocated for the groups to tour and analyze the area together. This exercise differed from the excursions of Day 1, in that the focus shifted to problems and potentials discussed in the earlier studio exercise, and architecture-archeology collaboration was achieved through mixed groups.

The second seminar of the workshop was titled "Light Structures – Mobile Architecture" and was presented by Assoc. Prof. Dr. Yavuz Taneli. The seminar focused on identifying structural elements of mobile systems, as well as presenting a multitude of global examples of such structures. Participants were expected to utilize this information to solve or to draw attention to the problems, and/or to strengthen or re-consider the potentials they identified in Myndos. Examples of mobile structures were discussed between facilitators and participants, and their purposes, construction details, and technologies were examined.

The third seminar of the workshop, "Architectural Patterns-Mapping and Externalization" was presented by Instructor Dr. Selay Yurtkuran. The seminar described how an architectural pattern could be mapped experientially, and how observations and evaluations could be externalized.

The fourth seminar of the workshop titled "The Forms of Architectural Representation" was presented by Research Assistant Gözde Kırlı. The lecture introduced the concepts of communication and design message, and informed the participants on methods for representing ideas most legibly. The presentation was supplemented with numerous examples.

Succeeding the seminars, participants and the facilitators were requested to write down and typographically express 10 words that came to their minds when the Myndos Antique City was mentioned, and to elaborate on the feelings, and perceptions of these words as they were noted, as well as identify their relative strengths. The aim of this exercise was to immediately apply the information provided by the second seminar of the day, "Architectural Patterns-Mapping and Externalization," as well as creating an experiential map of words most used to describe Myndos and determining their relative values. The word mapping exercise concluded the second day of the workshop.

3.3. Day 3: Maturation and Manufacture

The third day started with a studio. At the end of the studio session, participants presented to fellow students and facilitators, their analysis, ideas, and designs, through photographs, videos, sketches, presentation boards, and models in various scales. Subsequent to the critique, fruitful discussions led to the production of further ideas. Presentations were followed by another studio session. Instructors paid particular attention to act as facilitators rather than teachers.

3.4. Day 4: Last Touches

The fourth day of the workshop commenced with student presentations. During these presentations, participants received their final critiques from each other and from facilitators, and continued to work in the open-air studio. In the following hours, students finalized their designs, and completed their models, presentation boards, and digital presentations. For the final jury, students were requested to prepare three A1 size sequential presentation boards, architectural models in various scales, and to supplement their presentations with music and videos as necessary.

3.5. Day 5: Final Jury

On the final day of the workshop, a jury of fellow students, facilitators, and local administrators evaluated the end products.

4. Student Work

4.1. Functional Shell Design

The group comprising of two archeology, and three architecture students identified Asar Island, where the archeological excavation continues, as its focus for problems and potentials.

Group members observed that archeologists taking part in excavations during the four-month excavation period starting in June are prone to the detrimental effects of the scorching sun. Additionally, they witnessed that domestic and foreign tourists willing to visit the excavation site, unintentionally damaged the findings as they explored the unprotected area. The students proposed a "Functional Shell" over Asar Island, aiming to solve (ameliorate) the problem they identified. The student group identified three main characteristics for the functional shell. The shell is conceived as a promenade on which one can walk, with recurrent observation decks, and opportunities for working comfortably in shaded areas throughout the day.

Participants conducted a variety of analyses to determine the route that the shell would follow (Figure 3). Findings regarding historical traces, pedestrian movement, focal points, and green areas influenced the design.

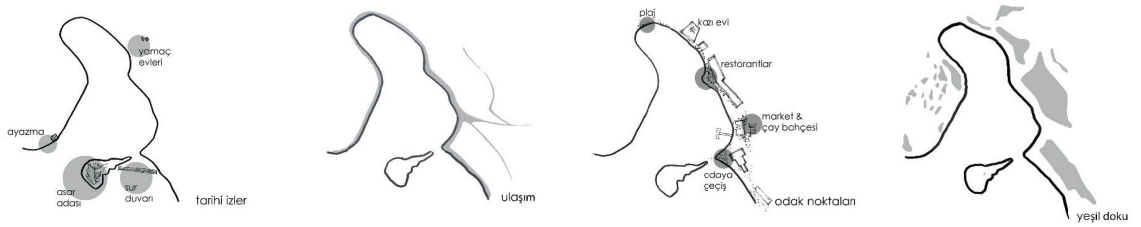


Fig. 3. Analytical diagrams of Asar Island. (a) historical traces, (b) pedestrian movement, (c) focal points, and (d) greens areas.

The work group deliberated that transportation to the island by raised sea bed had significant potential, and thus decided not to intervene in the current situation. Students positioned entrance and exit points of the shell at the location where visitors naturally approach the island on foot, and allowed it to continue its original function.

The proposed shell ascends via platforms towards the peak of the island where extensive excavations have been carried out. Each platform provides a unique perspective to visitors (Figure 4).

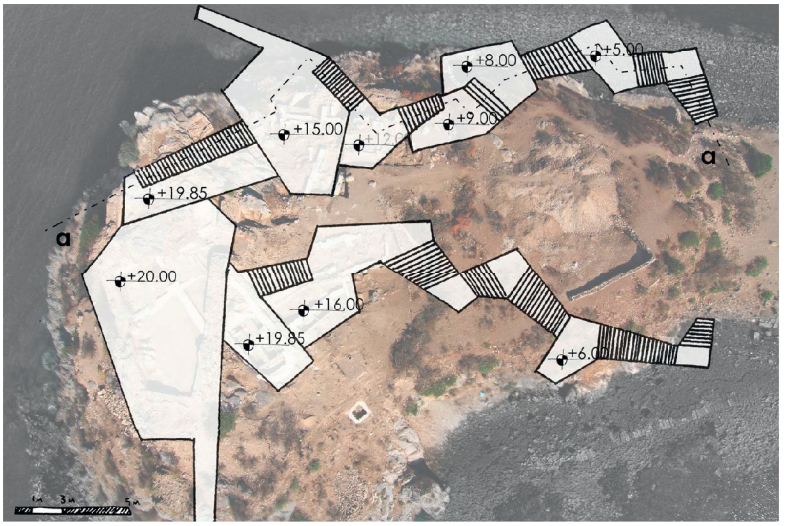


Fig. 4. Fonksiyonel üst örtü planı

As the terrace is repositioned over excavation openings, it is elevated considerably to allow for a view of both the Aegean Sea and Gümüşlük. The shell is raised so that archeologists working on site are shaded, yet sufficient natural light and air is available for a comfortable environment (Figure. 5).

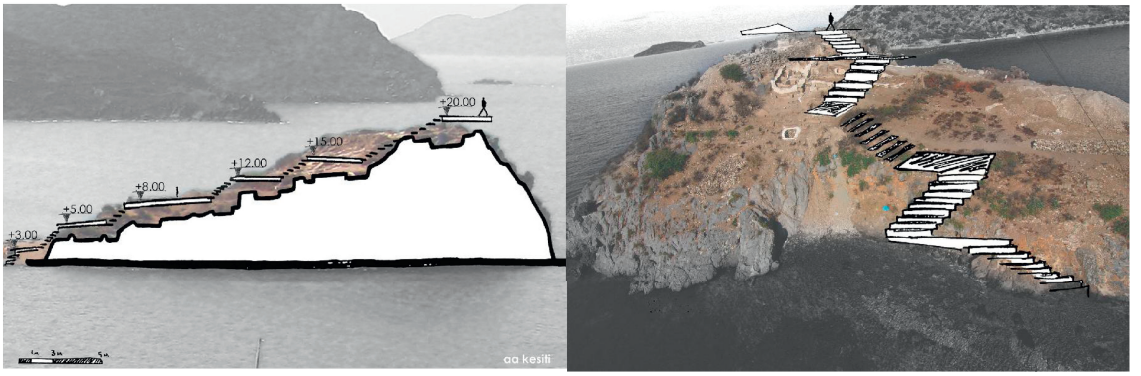


Fig. 5. Functional shell. Section a-a & Section b-b.

Students arranged their presentation boards by including 3 dimensional visuals of the island that they created by juxtaposing hand drawn sketches with photographs, as well as analyses conveyed on plan drawings, photographs they found instrumental, and various information about the island (Figure 6).

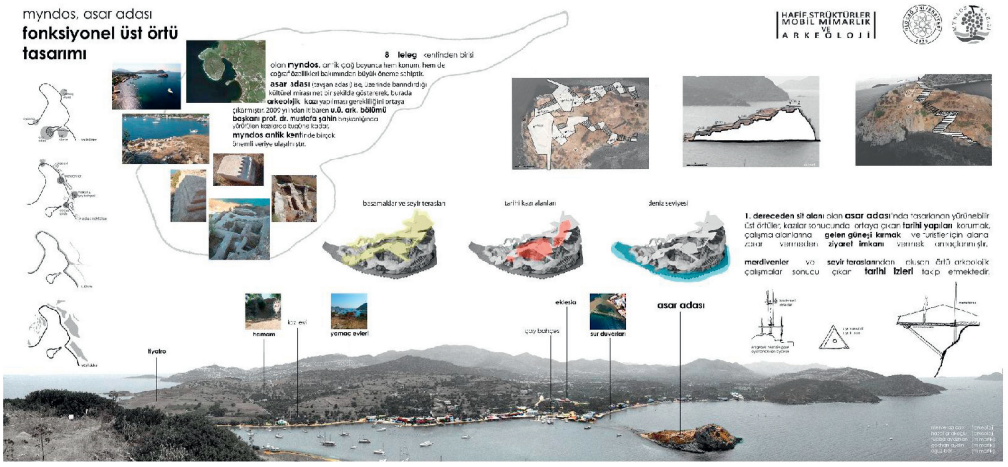


Fig. 6. Presentation boards.

Additionally, the students utilized three-dimensional representations of the island they constructed by combining their analyses with photographs of the architectural model to assess the success of their design in solving or minimizing the problems they identified at the outset (Figure 7).

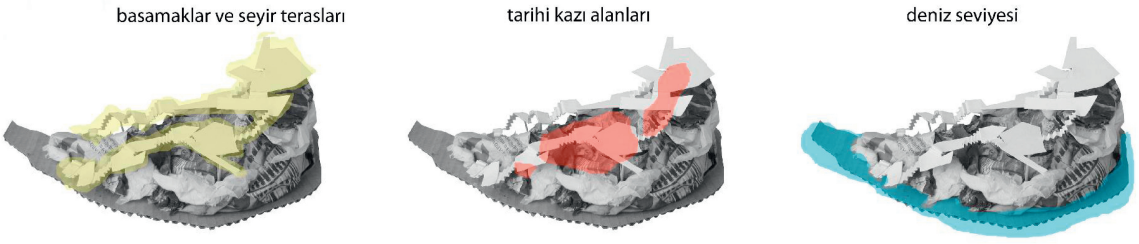


Fig. 7. Three-dimensional analyses. Left to right: Steps and observation decks, excavation sites, and sea level.

4.2. Myndos Sail

Members of another group comprising of 2 archeology, and 3 architecture students observed that the harbor may have had an important role in the Myndos antique city, and that still today a considerable number of ships and yachts enter the harbor. The students proposed a design to transform the interaction between the land and the island into a controlled and enjoyable experience without damaging the fabric of the place.

The design was developed around the idea of placing posts around the existing raised sea bed that connects the mainland to the island, and proposing a new walkway with a further raised platform connected to these posts.

Participants initially analyzed vehicular and pedestrian access to Asar Island and Gümüşlük, and also determined locations of archeological findings (Figure 8).

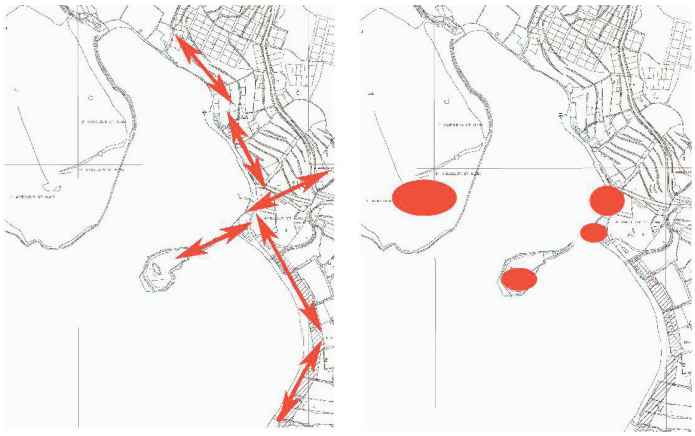


Fig. 8. (a). Analysis of pedestrian and vehicular access; (b) locations of archeological findings.

As the design progressed, the student group realized that visitors to the island may suffer from direct sun light, and consequently they modified their design to include a white fabric shade above the platform. The shade would be attached to the posts supporting the platform. The overall design with its posts, platforms, and white shades, is a reference to the masts, hulls, and sails of ships anchoring in the safety of the harbor over centuries (Figure 9).

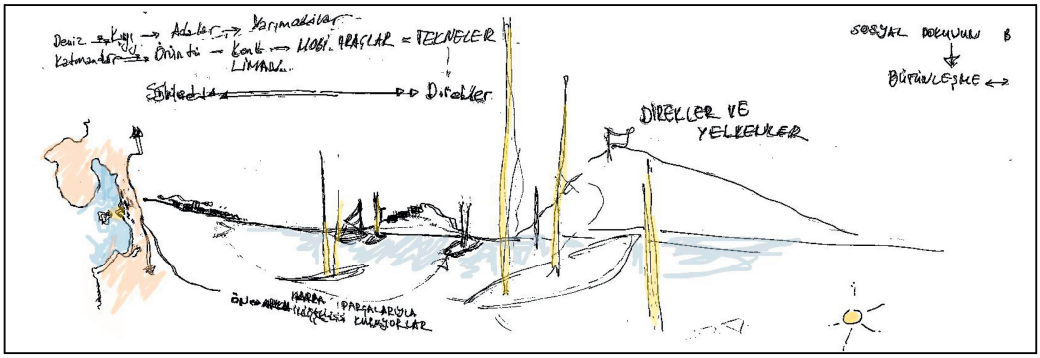


Fig. 9. “Myndos Sail” design drawings.

The student group made effective use of hand drawn sketches in their presentation boards, and supplemented these sketches with three dimensional visuals they created by combining photographs of the surroundings with photographs of their architectural model. The boards also included text detailing their design (Figure 10). Presentation boards for this group, unlike the previous group’s work, included the typographical mapping exercise carried out on Day 2 of the workshop.

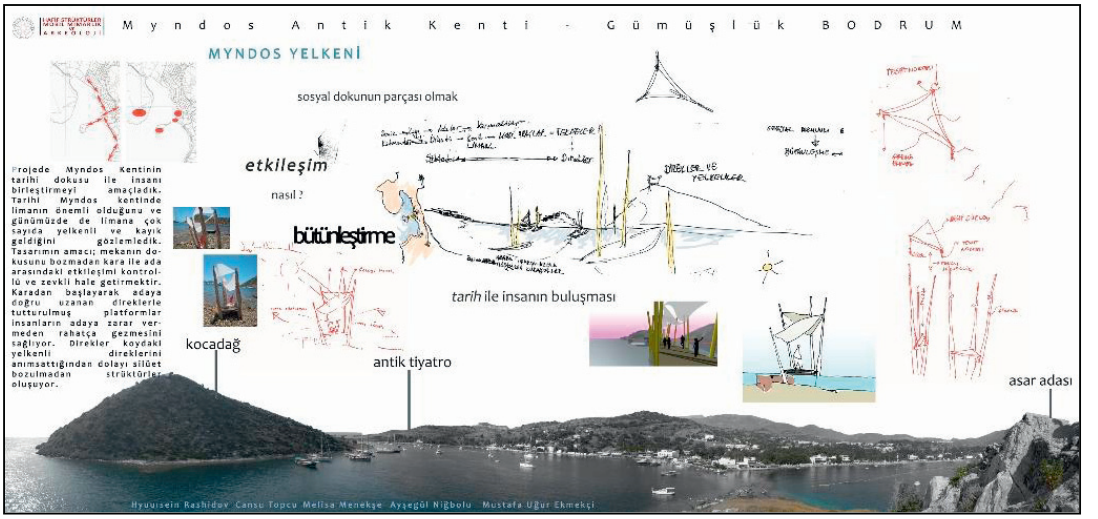


Fig. 10. “Myndos Sail” presentation boards.

5. Conclusion

The ‘Lightweight Structures, Mobile Architecture, and Archeology Workshop’ proved to be an effective exercise in experiential learning for architecture and archeology students. The location as a potential ground for the proposed structures made the studio effort engaging, and allowed an abundance of local residents to voice their thoughts. Presentation boards prepared by the student groups are vivid reflections of the creative process, and its benefits to learning. It can be postulated that similar cooperation among engineering and architecture students would yield similar results.

Acknowledgements

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