

## Sustainable Exhibition Stand Design: A Guide for Architecture Students Promoting Environmental Consciousness and Creative Design

### ABSTRACT

Communication allows for the sharing of knowledge, sentiments, and experiences. People have employed a variety of communication channels and venues throughout history. Trade exhibitions are venues for the display of goods and services, and they make use of commercial display stands. Companies have a fantastic opportunity to sell their goods, enhance their brand identities, and form alliances at these trade shows. Exhibition spaces act as venues for both brand identification and communication. Eco-friendly designs can assist in saving the costs connected with setting up a display at trade exhibitions, which can be rather expensive. Sustainable booth designs include the use of recyclable materials, encouraging energy and water conservation, and reducing environmental effects. This study offers a case study on an eco-friendly exhibition stand design as part of a university architecture curriculum. This article's goal is to provide architectural students with greater knowledge about sustainable exhibition stand design by offering a scientific viewpoint on the topic. The essay extols the virtue of sustainability in moral design and urges students to adopt practices that have a positive influence on the environment and preserve natural resources. It highlights how the stand design may include a variety of sustainability principles, including water management, waste management, material choice, and energy efficiency. Furthermore, this study aims to educate architectural students on sustainable exhibition stand design and encourage them to adopt design approaches that reduce environmental impacts. According to the results of the study, students demonstrated an increase in their knowledge levels regarding sustainable designs and their integration into projects. Students particularly offered solutions related to waste management and the use of recycled materials in stand designs. This study also provides guidance for different works on sustainable exhibition stand design, encompassing energy efficiency, waste management, material selection, and sustainability principles. It can serve as a resource for architecture and interior design students.

**Keywords:** Architecture Education, Stand Design, Sustainability, Interior Design.

### INTRODUCTION

Communication is an essential process that enables the sharing of information, experiences, and emotions among individuals. Historically, communication has been a tool used by people to showcase and pass on what they possess to future generations (Demir 2009). People have developed communication tools and spaces to the fullest extent possible, utilizing all the opportunities available in their time. The purpose and scope of showcasing have evolved over time, and this evolution is reflected in the architectural structure of exhibition spaces. Fairs have transformed into platforms where products or services are exhibited, creating spatial organizations that provide a backdrop for spatial communication between exhibitors and visitors (Fettahoğlu and Aydınhan 2023). Fairs, along with industrialization, globalization, and technological advancements, have become increasingly important exhibition spaces. When approached from a commercial perspective, showcasing takes place through trade fairs, and exhibition spaces are referred to as trade fair booths. Trade fairs, driven by globalization, prompt companies to seek new markets in order to maintain their existing market share and increase their profits. These trade fairs are commercial exhibitions where products and services are showcased at the national and international levels. Trade fairs occur as a result of companies in similar sectors coming together to hold discussions, sell products, and establish business connections. Fairs play a significant role by reflecting the latest developments in the industry and aiming towards the future. Trade fairs serve as the most suitable showcases for numerous manufacturing companies to sell their products or services. Fairs serve as an important platform for intercommunication between the masses. As an extension of economic and cultural developments, fairs are events where exhibition stands of businesses strive to attract attention. These stands are used with the purpose of introducing business products or services to the target audience, strengthening brand image, solidifying collaborations, and increasing sales potential. Exhibition spaces also function as tools that reflect brand identity. With the increase in brand awareness and advertising expenditures by companies, fair organizations are constantly evolving, varying in size and quality. However, concepts such as meetings and interaction still maintain their relevance at the core of these organizations. By being used as spaces where participants and visitors can come together to interact, exchange information, and establish business relationships, exhibition spaces have diversified the purpose of fair organizations. They can now encompass different objectives, including entertainment, cultural promotion, and strengthening international relations (Yılmaz). In the present day, comprehensive fair organizations bring together participants from different sectors to serve various goals. In this

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context, the design of fair booths is of great importance. The proper use of design elements enhances the impact and functionality of exhibition spaces (Narmanli 2019). While exhibition spaces provide opportunities for businesses to achieve commercial goals, they also serve social and cultural purposes such as gathering, interaction, knowledge sharing, and the development of business relationships. Stands are products of design that possess functionality and aesthetics. They should be sturdy, eye-catching, and directive. The design of fair booths is an interdisciplinary field where different professional groups, such as architecture, interior design, industrial design, graphic design, multimedia, and construction, converge (Kaptan 2021).

Opening a booth at trade fairs is an activity that requires high costs. These costs include the design and construction of the booth, rental fees, decoration, provision of basic services, personnel expenses, promotional materials, logistics, and transportation. The cost of a trade fair booth can vary depending on various factors such as the size and prestige of the fair, the size and design of the booth, the quality of materials used, the duration of the fair, and its location and geographical position. Particularly, large international fairs can lead to higher costs. Therefore, designing sustainable booths can provide various benefits for fair participants. The structures are designed to reduce the adverse impacts of the surrounding environment (Oberfrancová, Legény, and Špaček 2019, Sultan Qurraie and Kılıç Bakırhan 2023). Energy resources must be employed in the building industry and in design to minimize energy consumption in order to meet humanity's desire for sustainability (Qurraie and Kırac 2022). Sustainability is an approach that aims to effectively use resources and reduce environmental impacts by considering environmental, social, and economic factors. Incorporating sustainability principles into the design of fair booths can offer several advantages:

- ✓ Sustainable booth designs can aim to achieve cost savings. These designs include elements such as reducing energy and water consumption, improving waste management, and using reusable materials. This can result in savings on energy and water bills while also reducing waste management costs.
- ✓ Sustainable booth designs can provide advantages for businesses in terms of brand value and image. Nowadays, consumers have an increasing interest in sustainability. A sustainable fair booth showcases a business's environmental awareness and social responsibilities, which strengthens its brand value and provides a competitive advantage.
- ✓ Sustainable booth designs can include elements such as energy efficiency, the use of recyclable materials, natural lighting, water conservation, and environmentally friendly printing materials. By incorporating these elements, fair booths can contribute to reducing environmental impacts and promoting sustainable practices.

## **PURPOSE, SCOPE**

The purpose of this article is to provide architecture students with an academic perspective on sustainable fair booth design and to help them develop a deeper understanding of this field. The article emphasizes the importance of sustainability concepts in fair designs and encourages students to embrace design approaches that minimize environmental impact and preserve natural resources. The study explores how various sustainability principles, such as energy efficiency, waste management, material selection, and water management, can be integrated into booth design. By assigning projects related to sustainable booth design to architecture students, the aim is to enhance their knowledge and skills in sustainability and to play a guiding role in instilling sustainable design principles in the architects of the future. The study consists of three stages. Firstly, it builds upon the information documentation and training provided to senior architecture students within the scope of an elective interior design studio course, enhancing their competence in the specific subject matter. In the second stage, students who take the course are asked to develop architectural solutions based on sustainable design principles. In the final stage, solution alternatives are evaluated and systematized, determining the green design features of the booth. This article presents an academic approach to assist architecture students in developing a comprehensive understanding of sustainable fair booth design. Within this framework, guidance is provided to students on how to progress in the design process while adhering to sustainability principles, using information derived from existing literature, industry best practices, and expert opinions on sustainability. The article can be regarded as a resource for architecture students to enhance their knowledge and skills in the field of sustainable fair booth design.

## **SUSTAINABILITY**

Environmental issues have become a growing concern in today's world. Topics such as climate change, depletion of natural resources, energy efficiency, and waste management have increased the importance of the concept of sustainability. Coined officially in the "Our Common Future" report prepared by Gro Harlem Brundtland in 1987, "sustainable development" signifies humanity's ability to meet its daily needs and sustain development without jeopardizing the needs of future generations. Sustainable development is based on the principle of meeting present needs without compromising the ability of future generations to meet their own needs (Bourdeau 1999). The Brundtland Report defines sustainable development as a prerequisite for an environmentally sound economy, emphasizing its significance as an economic concept based on rational resource utilization beyond a simplistic understanding of environmentalism (Ozmehmet 2008). The 1992 Earth Summit in Rio de Janeiro established a

framework aiming to address concerns related to sustainable development and promote healthy and productive lives for people (Birkeland 2002). Since then, sustainability has become a fundamental principle in national and international initiatives (Afacan 2017). Sustainability represents a balance between human needs and the productivity of natural systems. The American Institute of Architects (AIA) defines sustainability as the continuity of societal functionality and balance, provided that essential resources are not depleted or overburdened. Sustainable architecture aims to produce buildings that are compatible with socio-economic, cultural, and environmental contexts (Tatar 2013). Sustainable buildings embrace environmentally friendly and energy-efficient designs to minimize negative impacts on users and the environment (Ali and Al Nsairat 2009). As the built environment is a significant factor in global energy consumption, it is essential to transform the existing building stock into a sustainable one (Luther and Rajagopalan 2014, Zhao et al. 2015). Sustainability has the potential to reduce environmental pollution, maintenance and transportation costs, and material waste by reducing energy consumption in construction (Douglas 2006).

Since the field study is part of the elective course on interior design, relevant studies on interior design and sustainability have been investigated in the literature. Considering that the field study focuses on stand design as a display unit, it is considered a collaborative area between architecture and interior design. Stark and Park examined undergraduate students' perceptions of sustainability, analyzed their assignments, and explored campus culture and sustainability programs (Stark and Park 2016). Ruff and Olson conducted a survey study on the ecology and sustainable practices in the early stages of design development in 2009 (Ruff and Olson 2009). Savageau conducted a survey study on a sustainable design course assignment conducted over a semester in 2013. Ulasewicz and Vouchilas examined whether students' motivation for behavior change toward sustainable activities changed over time (Ulasewicz and Vouchilas 2008). Afacan investigated the sustainability of university library structures through student projects and surveys in 2017 (Afacan 2017). Geçimli and Kaptan conducted an examination of the relationship between interior design and sustainability from ecological, economic, and socio-cultural perspectives in 2019 (Geçimli and Kaptan 2019). Fettahoğlu and Aydınlan examined the scope and role of lighting design in sustainability in stand design in 2022 (Fettahoğlu and Aydınlan 2023). Yıldıztepe conducted research on sustainable interior design using three-dimensional texts (Yıldıztepe, 2022). Felix et al. conducted research on sustainable materials in interior spaces in 2023 (Félix et al. 2023).

## METHOD

Sustainable design course assignment conducted over a semester in 2013. Ulasewicz and Vouchilas examined whether students' motivation for behavior change toward sustainable activities changed over time (Ulasewicz and Vouchilas 2008). The study was conducted in three steps. Firstly, a literature review was conducted to analyze the originality of the subject and existing studies in the literature. The academic literature on sustainable fair stand design was reviewed, and relevant sources regarding sustainability principles, energy efficiency, waste management, and material selection were examined. In the second step, the information obtained from the literature review was compared, similarities and differences were identified, and an integrated understanding was established. It was observed that there was no study specifically addressing this scope in the literature. In the third step, a field study was conducted to enhance practical applicability as the article aimed to be a resource for students. This step includes project work and recommendations on how students can integrate sustainability principles into their fair stand designs based on the synthesized information.

## Field Study

This study was conducted as part of the Interior Design Studio course at the Department of Architecture, Karabük University. The study was offered as an elective course in the 8th semester, with a duration of 4 hours per week and a credit value of 5. It was one of the projects carried out during the semester and was designed to span a total of 7 weeks. The studio work involved the participation of 20 students and a single instructor. Due to having only one-course instructor, the students were divided into ten teams of two. The subject of the study was determined as "Sustainable Exhibition Stand Design." At the beginning of the study, the students were provided with information about sustainability principles, important factors for exhibition stand design, and relevant literature. Research and design strategies necessary for exhibition stand design were taught to the students. At this stage, students were encouraged to develop ideas for stand design while considering sustainability principles. In the second stage of the study, architects who specialize in exhibition stand design professionally attended the course, sharing their projects, design processes, and production methods. In the third stage, students were asked to further develop their designs and assess their compliance with sustainability criteria. In the fourth and final stage, the students' projects were evaluated and categorized into qualitative groups and thematic categories for comparison.

The aim of this study is to contribute to the development of students' knowledge and skills in sustainable exhibition stand design. It also aims to promote the integration of sustainability-focused design principles into architectural education. In this paper, information has been compiled from existing literature on sustainable exhibition stand design, taking into account best practices in the industry and expert opinions on sustainability. The primary purpose

of the information presented in the paper is to educate both architecture and interior design students about sustainability principles and provide guidance on how to implement them in the design process. The flow chart of the methodology is shown in Figure 1.



**Figure 1:** Flow chart of the methodology  
**Source:** Produced by the author

The students were provided with an existing exhibition venue as their project site. They were asked to conduct research on companies for which they would design exhibition stands. There were no specific restrictions imposed by the course instructor, allowing students to choose companies from different sectors. At this stage, students were instructed to examine sample stands of the chosen companies and determine their allocated space within the given exhibition area. Afterward, students were required to analyze their stand designs and projects focusing on sustainability themes. The analysis method aimed to encourage students to thoroughly examine their projects, identify significant findings, and evaluate their sustainable exhibition stand designs. By carefully analyzing their projects, students evaluated their design approaches, material choices, energy efficiency measures, waste management, and other sustainability aspects. They utilized visual documentation and written reports of sample projects to analyze how their designs were conceptualized, how well they aligned with sustainability principles, and how they evolved from the initial sketches. Following the analysis, students synthesized their initial design ideas with the knowledge accumulated during the process and completed their design processes by receiving desk critiques on a weekly basis. The submitted projects were categorized and evaluated under sustainability themes by the course instructor and other jury members participating in the course.

## RESULTS



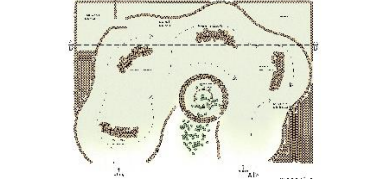



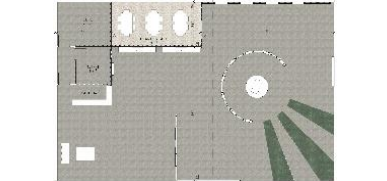

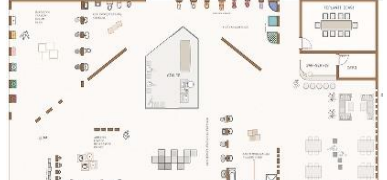

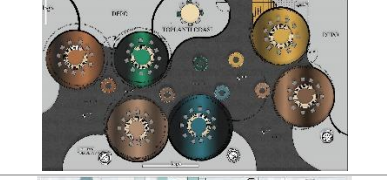



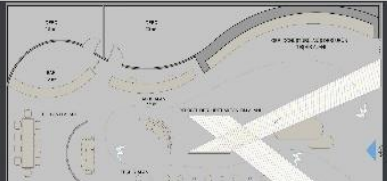



The student projects on sustainable stand design were grouped based on different understandings of sustainability:

- ✓ **Material and Resource Usage:** Projects that preferred recyclable and natural-based materials for their designs, emphasizing sustainability principles in areas such as material selection, energy efficiency, and waste management.
- ✓ **Energy Efficiency:** Projects that incorporated energy efficiency measures and utilized sustainable energy solutions such as natural lighting and passive heating/cooling systems.
- ✓ **Water Management:** Projects that implemented measures for water conservation and efficient water use, including systems for greywater recycling or rainwater harvesting.
- ✓ **Social and Cultural Impact:** Projects that focused on social sustainability principles, incorporating community participation or highlighting local culture in their designs.

These categorizations help in better understanding the similarities and differences among student projects by assigning them to specific sustainability categories. This way, the diversity, achievements, and areas for improvement in sustainability projects can be more clearly identified.



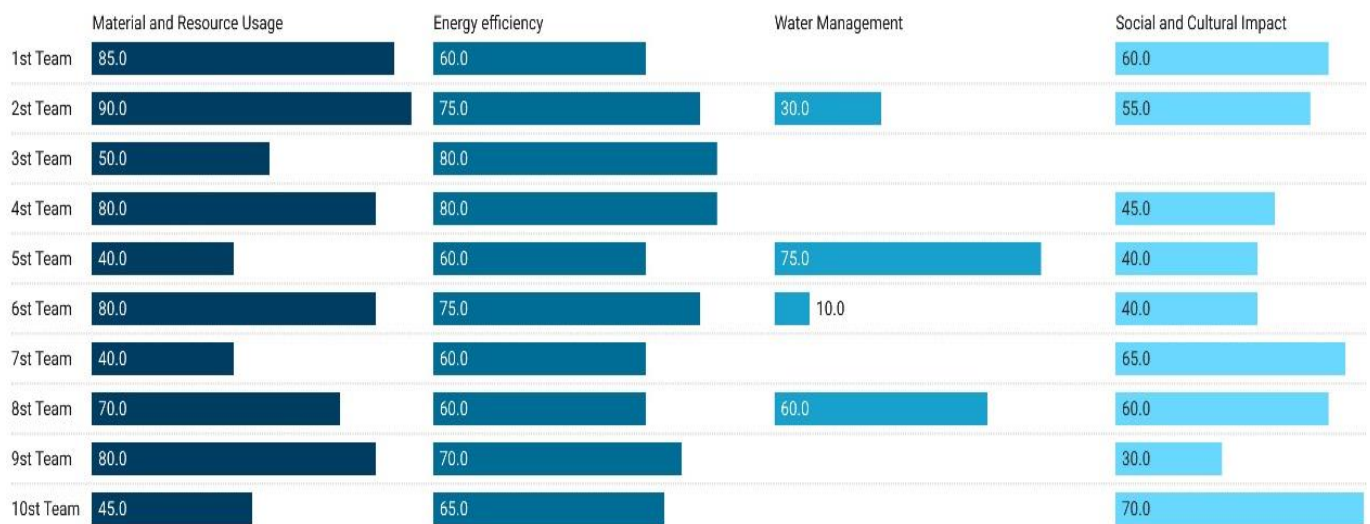
**Table 1:** The projects of the students

	<b>Concept</b>	<b>Plan</b>	<b>Image</b>	<b>Classification</b>
<b>1st Team</b>	Recycled Fishing Net			Material and Resource Management
<b>2nd Team</b>	Production from recycled paper from coffee cup waste			Material and Resource Management
<b>3rd Team</b>	Energy saving of lighting elements			Energy efficiency
<b>4th Team</b>	Recycled Transport Pallets			Material and Resource Management
<b>5th Team</b>	Since the company is a sanitary ware company, water management			Water Management
<b>6th Team</b>	Recycled Coffee Capsule Plastics			Material and Resource Management
<b>7th Team</b>	It ensures the continuity of the culture that is identified with the human being.			Social and Cultural Impact
<b>8th Team</b>	Design from plant waste for the sake of natural material sustainability			Material and Resource Management
<b>9th Team</b>	Production of recycled building elements from three-dimensional texts with materials			Material and Resource Management



**Kaynak:** Produced by the author (student studio work)

During the evaluation process, a jury consisting of a course instructor, an expert architect specializing in exhibition stand design, and two academics with expertise in the field of energy were formed. The jury established criteria based on specific categories to assess the sustainable performance of student projects and scored the projects accordingly. In the category of material and resource usage, the recyclability rate of the materials used in the projects was evaluated. In the energy efficiency category, the energy consumption levels of the projects were examined. The water management category focused on evaluating the amount of water conservation achieved by the projects. The social and cultural impact category considered factors such as the projects' connection to the community and their social and cultural effects. The jury initially conducted meetings with the groups to gather information about the projects. They then evaluated each category based on the established criteria. The sustainable performance of the projects was assessed through these analyses. This process provided students with an opportunity to evaluate their projects from a broader perspective and apply sustainability principles. The feedback from the jury increased students' awareness of sustainability and helped them consider these principles more prominently in their future designs.



**Figure 2:** Jury Evaluation and Classification

**Source:** Produced by the author

According to the evaluation reports of the jury (Figure 2), it can be observed that the students have achieved results that align with the sustainability criteria they initially aimed for. Particularly in the early stages, it can be said that the students have made significant progress in terms of sustainability. The choice of different companies by the teams directly influenced the design and the specified criteria. Conducting the project within the fair area has limited the students in terms of design and some principles. Material and Resource Usage: Team 2 demonstrated successful performance in material and resource usage, receiving the highest score. Team 1 also received a high score but slightly lagged behind Team 2. The performance of the other teams varied. Energy Efficiency: Team 3 achieved the highest score, showing a successful performance in energy efficiency. Team 2 also received a high score. Water Management: Team 5 achieved the highest score, demonstrating a successful performance in water management. Social and Cultural Impact: Team 10 received the highest score, showcasing a successful performance in social and cultural impact. Team 7 also received a high score. Overall, when the projects were examined, it was observed that the students emphasized sustainability through material and waste usage. The focus of the projects was on recycled waste or products. Each project incorporated various energy-saving parameters, such as electricity consumption and energy-efficient lighting. Since the design was carried out within the fair area, no specific work was done regarding climate control. Only the teams that selected relevant companies showed particular attention to water management. In terms of social and cultural impact, almost all teams attempted to establish a connection between their projects and the community within the context of the companies they designed.

**CONCLUSIONS**

This article provides a foundation for students to understand sustainability principles, apply them, and develop industry knowledge and skills. The sustainability-focused design approach helps architecture and interior design

students fulfill environmental and social responsibilities in their professional practice. Therefore, enhancing students' knowledge and abilities in this field enables them to create a sustainable impact on their future projects. Additionally, this article serves as a significant resource contributing to the literature on sustainable exhibition stand design, establishing a basis for further research. The contribution of this study encompasses various dimensions. It is a fact that research on sustainable exhibition stand design is limited. This article provides information that aids students in gaining more awareness in this field and basing their design processes on sustainability principles. Secondly, this study targets architecture and interior design students, equipping them with industry knowledge and skills. Furthermore, positive effects on student participation and motivation were derived from student interviews in the study results. This study sets an example by teaching sustainability-oriented design principles at an early stage, enabling students to adopt a sustainable approach in their future professional careers and contribute to the industry. This study offers comprehensive knowledge resources for students regarding sustainable exhibition stand design, providing insights into sustainability principles, energy efficiency, waste management, material selection, and other related topics. This helps students gain awareness of sustainability and develop an awareness of reducing environmental impacts in their designs. The study demonstrates to students how to practically apply sustainability principles. It provides recommendations on integrating energy efficiency strategies, waste management plans, material selection, and other sustainability elements into the design process. This enables students to enhance their ability to apply sustainability principles in real projects. Additionally, this study assists students in understanding the exhibition design industry and developing the necessary knowledge and skills in this field. It offers details on current market insights and patterns in environmentally friendly show stand design. This increases students' knowledge of employment prospects after graduation and aids in the development of their skills in this area.

## REFERENCES

- Afacan, Y. (2017). Sustainable library buildings: green design needs and interior architecture students' ideas for special collection rooms. *The Journal of Academic Librarianship*, 43(5), 375-383.
- Ali, H. H., & Al Nsairat, S. F. (2009). Developing a green building assessment tool for developing countries–Case of Jordan. *Building and environment*, 44(5), 1053-1064.
- Birkeland, J. (2002). *Design for sustainability: a sourcebook of integrated, eco-logical solutions*: Earthscan.
- Bourdeau, L. (1999). *National Report: Sustainable development and future of construction in France*. France: Centre Scientifique Et Technique Du Bâtiment.
- Demir, Ç. (2009). Günümüz Sergileme Tasarımı, Türleri ve Londra'dan Sergileme Tasarım Örnekleri. *Sanat ve Tasarım Dergisi*, 1(2).
- Douglas, J. (2006). *Building adaptation*: Routledge.
- Félix, M., Santos, G., Sá, J., Dias, S., & Saraiva, M. (2023). Multifunctional Furniture for Tiny Houses–Design, Quality, Innovation and Sustainability in Advanced Materials. In *Quality Innovation and Sustainability: 3rd ICQIS*, Aveiro University, Portugal, May 3-4, 2022 (pp. 309-321): Springer.
- Fettahoğlu, E., & Aydınlan, E. (2023). Fuar Stantlarında Aydınlatma Tasarımının Kapsamı ve Rolü Üzerine Karşılaştırmalı Bir Tespit. *Uluslararası Mühendislik Tasarım ve Teknoloji Dergisi*, 4(1-2), 11-23.
- Geçimli, M., & Kaptan, B. B. (2019). İçmimarlık ve sürdürülebilirlik ilişkisi: Ekolojik, ekonomik ve sosyal/kültürel açıdan inceleme. *Afyon Kocatepe Üniversitesi Sosyal Bilimler Dergisi*, 21(1), 191-201.
- Kaptan, S. (2021). *Görsel iletişimde stant tasarımı ve anlam üretimi*.
- Luther, M. B., & Rajagopalan, P. (2014). Defining and developing an energy retrofitting approach. *Journal of Green Building*, 9(3), 151-162.
- Narmanlı, A. S. (2019). İstanbul mobilya fuarlarında özel tasarım stantlarının iç mekan açısından irdelenmesi. *Fen Bilimleri Enstitüsü*,
- Oberfrancová, L., Legény, J., & Špaček, R. (2019). Critical thinking in teaching sustainable architecture. *World Trans. on Engng. and Technol. Educ*, 17(2), 127-133.
- Ozmehmet, E. (2008). Dünyada ve Türkiye Sürdürülebilir Kalkınma Yaklaşımları. *Yaşar Üniversitesi E-Dergisi*, 3(12), 1853-1876.
- Qurraie, B. S., & Kırış, B. (2022). Evaluation of energy efficiencies of double skin façade systems and double skin green façade systems in Turkey. *International Journal of Environmental Studies*, 1-15. doi:10.1080/00207233.2022.2115202
- Ruff, C. L., & Olson, M. A. (2009). The attitudes of interior design students towards sustainability. *International Journal of Technology and Design Education*, 19, 67-77.

- Stark, J., & Park, J. G. P. (2016). Interior design students perceptions of sustainability. *International Journal of Sustainability in Higher Education*, 17(3), 361-377.
- Sultan Qurraie, B., & Kılıç Bakırhan, E. (2023). Evaluation of facade systems in different climate zones regarding energy, comfort, emission, and cost. *Arab Journal of Basic and Applied Sciences*, 30(1), 123-136. doi:10.1080/25765299.2023.2180885
- Tatar, E. (2013). Sürdürülebilir mimarlık kapsamında çalışma mekanlarında gün ışığı kullanımı için bir öneri. *Süleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü Dergisi*, 17(1), 147-162.
- Ulasewicz, C., & Vouchilas, G. (2008). Sustainable Design Practices and Consumer Behavior: FCS Student Perceptions. *Journal of Family and Consumer Sciences*, 100(4), 17-20.
- Yıldıztepe, B.(2022). İç Mekân ve Çevre Tasarım Elemanlarında Sürdürülebilir Ham Maddeler ile 3 Boyutlu Yazıcıların Kullanımı. *Sürdürülebilir Mühendislik Uygulamaları ve Teknolojik Gelişmeler Dergisi*, 5(1), 108-114.
- Yılmaz, A. (2013). Fuar standı tasarımında süreç yönetimi (Master's thesis, TC Mimar Sinan Güzel Sanatlar Üniversitesi Fen Bilimleri Enstitüsü).
- Zhao, D.-X., He, B.-J., Johnson, C., & Mou, B. (2015). Social problems of green buildings: From the humanistic needs to social acceptance. *Renewable and Sustainable Energy Reviews*, 51, 1594-1609.