

The influence of historical context on architectural design: a retrospective analysis of student work

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ABSTRACT: The influence of historical context on architectural design can take many forms, from the use of traditional building materials and techniques to the incorporation of historical forms and design principles. Buildings are often designed to blend in with the existing character of their surroundings, whether it be a city's unique architectural heritage or traditional design elements, to create a sense of continuity and connection with the past. Architects may use traditional building materials or historical motifs to create a sense of authenticity and connection to the past. They can be used to create a sense of grandeur and timelessness in contemporary buildings. The influence of historical elements and context on architectural design is a remarkable approach for the design studio, which is a fundamental component of architectural education and resembles the profession of architecture in several key ways. This article elaborates on the effects of the historical context and historical elements on architectural design through a retrospective exploration of student work conducted at the third-year design studio at Bahçeşehir University, Istanbul, Turkey.

INTRODUCTION

Architecture is an intricate discipline that is deeply intertwined with history and culture. The built environment is a manifestation of the past and present, shaping the future of societies. Architectural design, in particular, is influenced by historical context, which refers to the physical, cultural and social aspects of a place that have developed over time [1]. The purpose of this article is to explore the influence of historical context on architectural design through a retrospective analysis of student work.

Architectural design education plays a critical role in preparing future architects to create buildings that are contextually appropriate and sustainable. Historical context is a fundamental aspect of architectural design, and it can provide inspiration for creating buildings that are respectful of their surroundings. Research has shown that integrating historical context into architectural design education enhances students' understanding of their role as architects in the preservation of cultural heritage [2][3]. In this article, the influence of historical context on architectural design is examined through the analysis of student work from the third-year architectural design studios from 2018 to 2022.

The significance of preserving historical and cultural heritage in architectural design education cannot be overemphasised. As future architects and designers, students must learn to appreciate the value of the context in which they operate. This is particularly important when it comes to the design of new buildings in historical areas, where the surrounding context and existing structures must be taken into account. Several scholars have emphasised the importance of incorporating cultural heritage and historical elements into architectural design education. Students need to learn to identify, document and analyse cultural heritage to gain a better understanding of the significance of historical context in architectural design [4].

The need for students to understand the importance of cultural heritage preservation and its role in shaping the built environment is crucial [5]. Furthermore, several studies have highlighted the effectiveness of incorporating historical context and cultural heritage into architectural design projects. In a study on the integration of historic and cultural context in design studio education, exposing students to historical and cultural contexts improved their design proposals by providing a deeper understanding of the site and its surrounding context [6]. Similarly, in exploration of the role of historical context in architectural design, incorporating historical and cultural contexts into design projects helped students develop a greater appreciation for the value of the surrounding context in design [7].

In light of these studies, it is clear that incorporating historical context and cultural heritage into architectural design education is crucial for producing well-rounded, contextually-aware architects and designers. This article seeks to explore the influence of historical context on architectural design through a retrospective analysis of student work, examining the ways in which historical context has informed and influenced design proposals. By examining a range of

design projects, the aim is to identify common themes and strategies for incorporating historical context and cultural heritage into architectural design education.

This study on student work allows to gain insights into the ways in which historical context has influenced architectural design. By examining student work from various semesters, one can identify common themes and strategies that have been employed to create buildings that are sensitive to their historical context. Research has shown that studying historical examples can help students develop a better understanding of the context in which they are working, leading to more contextually appropriate designs [8][9]. The goal of the study is to provide a comprehensive analysis of the influence of historical context on architectural design and to highlight the importance of incorporating historical context into architectural design education. By doing so, the author hopes to inspire future architects to create buildings that are respectful of their surroundings, and that contribute to the cultural and historical fabric of their communities.

In the following sections, a literature review on the topic of historical context in architectural design is provided and discussions on the retrospective analysis of student work are conducted. Then, the results of the analysis are presented and the implications of the findings are discussed. Finally, the article is concluded with a summary of the main findings and recommendations for future research.

DESIGNING IN HISTORICAL AREAS

Designing new buildings in a historical area is a complex process that requires careful consideration of the area's historical character and cultural significance. Building effects must be assessed in relationship to the place, since they affect their surroundings and this affect can vary by effect and function [10]. Architects and designers must balance the need for new development with the preservation of the area's unique identity, and must be sensitive to the expectations and desires of the local community.

Data gathering, problem and site analysis, and precedent studies are essential parts of the starting phase of the design process [11]. They are even more crucial for designing in a historical area. Architects and designers must conduct a thorough investigation of the historical context of the area, including its architectural style, cultural heritage, and social and economic structure. This research can help designers identify the unique features and qualities of the area that should be preserved or incorporated into the design of the new building. For example, in Montreal's historic district, architects incorporated the traditional ironwork and masonry details of the surrounding buildings into the design of a new hotel [12].

Another key strategy is contextual design, which involves creating a building that fits harmoniously into the surrounding environment. This can be achieved through careful consideration of the scale, massing and materials of the new building. For example, in the adaptive reuse of Palazzo Grassi in Venice, architects used a restrained palette of materials and carefully designed the fenestration to complement the existing architecture of the building [13]. Similarly, the new West Block building on Parliament Hill in Ottawa was designed to fit seamlessly into the surrounding landscape, with a low-profile design and a stone façade that echoes the historic buildings on the site [14].

The scale and massing of the new building should be carefully considered to ensure that it complements the surrounding buildings and does not overpower them. The new building should be of a similar height and scale to the existing buildings in the area. [15] The use of setbacks, terraces and other design elements can help to create a harmonious relationship between the new building and the existing buildings.

Adaptive reuse is another effective strategy for designing new buildings in historical areas. By repurposing existing buildings for new uses, designers can preserve the character and history of the area, while also addressing the need for new development [16].

Material selection is also an important consideration in designing new buildings in historical areas. Using materials that are consistent with the historic architecture of the area can help to create a sense of continuity and connection to the past. However, designers must also consider the sustainability and durability of the materials, as well as their cost and availability. Lyons provides a comprehensive guide to the selection and use of architectural materials in a variety of contexts [17].

Moreover, community engagement is an essential strategy for designing new buildings in historical areas. Architects and designers must work closely with the local community to ensure that the new building meets their needs and desires, and that it contributes positively to the cultural and social life of the area. This can involve public consultations, community workshops and other forms of engagement to ensure that the community is fully involved in the design process [18].

AWARENESS OF HISTORICAL CONTEXT IN ARCHITECTURAL DESIGN EDUCATION

Architecture has the power to shape and influence the society and the built environment, and it is essential to consider the preservation of cultural heritage and historical context in architectural design. Architectural design education plays

a critical role in shaping the attitudes of future architects towards the preservation of cultural heritage and the integration of historical context in their designs. Therefore, it is crucial to promote awareness and educate architecture students on the importance of preservation and historical context in architectural design. Historical context and cultural heritage are crucial elements in architectural design, as they provide a sense of continuity and identity to the built environment. The historical context of a site influences the design process and plays a significant role in shaping the built environment. The integration of historical and cultural contexts in architectural design helps to create a sense of place and identity, which is essential for the sustainability and liveability of the built environment.

Architectural education plays a vital role in promoting awareness and educating students about the preservation of cultural heritage and historical context in architectural design. Integrating heritage into architectural education helps to develop an understanding of the importance of cultural heritage in architectural design [19][20]. The integration of heritage education into the curriculum provides architecture students with the knowledge and skills necessary to design in a way that respects and preserves cultural heritage and historical context. The incorporation of cultural heritage and historical context into architectural education is not limited to the Western world, but also prevalent in the Middle East and Asia. Cultural heritage is an essential element in Turkish architecture, and integrating cultural heritage into architectural education in Turkey helps students to develop a sense of identity and continuity.

The awareness of the importance of preservation and historical context in architectural design education is crucial for future architects to design culturally sustainable and significant buildings. Integration of heritage and historical context into architectural education curricula promotes an understanding of the importance of preservation and cultural heritage in architectural design. By doing so, architecture students will be able to design buildings that respect and preserve the cultural heritage and historical context of a site, ultimately leading to a sustainable and liveable built environment.

A RETROSPECTIVE STUDY OF STUDENT WORK

The design studio as the core of architectural education comprises remarkable data about the students' approach towards particular subjects. The subject of designing in historically valuable areas is selected as the main focus in the scope of this article. Student work from the third-year design studio at Bahçeşehir University Department of Architecture in Istanbul, Turkey, have been inspected to find out the strategies and methods used by the students about utilising the historical context and its elements as design input. In the study, recent work from 2018 to 2022 has been included to portray the recent attitudes and approaches of the students.

The third-year design studio at the host university handles designing in historically rich areas as one of its focal points. The development of the city in the course of time, based on the historical evolution, and its major interruptions of continuity draw the conceptual frame of the studio, and it focuses on issues related to intervening in historical contexts as approached by the contemporary architectural culture. One of the learning outcomes of the course states that students who have succeeded will be able to understand architect's responsibility to work with respect to historic values and cultural heritage to improve the quality of life for local users. The site location changes every semester within the historically rich areas of the city; and the design problem consists of a public building with a complex function. The following table summarises the overall features of the third-year design studio between 2018 and 2022 (Table 1).

Table 1: The overall features of the third-year design studio at the host department.

Semester	Design problem	Location	Urban context	Historic values
2018-2019 Fall	Elementary school	Tophane	Historic neighbourhood, medium density	Urban pattern; civil architecture of 19th-20th Century
2018-2019 Spring	Mixed-use complex	Pera (Beyoğlu)	Historic neighbourhood, high density	Urban pattern; civil architecture of 19th Century, historic landmarks
2019-2020 Fall	Youth centre	Çukurcuma	Historic neighbourhood, medium density	Urban pattern; civil architecture of 19th-20th Century
2019-2020 Spring	Facilities for vocal education	Süleymaniye	Historic neighbourhood, low density	Urban elements, landmarks from early Ottoman period
2020-2021 Fall	Research hub	Anadolu Hisarı	Historic suburb, low density	Landmarks from early and late Ottoman period
2020-2021 Spring	Educational facilities	Yenikapı - Aksaray	Historic peninsula, high density	Urban pattern; landmarks from early and late Ottoman period
2021-2022 Fall	Community support centre	Yeldeğirmeni - Kadıköy	Historic neighbourhood, medium density	Urban pattern; civil architecture of 19th-20th Century
2021-2022 Spring	Performance hall	Haydarpaşa - Kadıköy	Historic waterfront, low density	Urban pattern; Landmarks from late Ottoman period

Throughout the years, the third-year design studio showcased that the students developed various attitudes regarding their buildings' relationship with the historical context. The strategies and methods they used vary from creating harmony with

the existing historical context using scaling and massing to adaptively reusing existing historical buildings. Additionally, protecting and exhibiting historically valuable elements, reviving the historical and cultural values of the location, juxtaposing the façade design with the existing one, creating contrast, and using and interpreting historic materials and textures are also strategies utilised by the students in their design studies. The following subchapters elaborate on these strategies gathered around five main titles, without any chronological order.

Blending in to the Existing Forms

Based on analysis, research and observations, students try to understand the character of the existing and historical patterns. These studies can be based on the research of the existing buildings' façade, historical maps or analysis of scales and massing of the buildings that constitute the urban fabric of the area. On the basis of these studies, students create harmony with the existing and historical context by following the traces they leave, using their scale and proportions on the layout or façade, or creating axial relationships with the highlighted urban tissue.

Standing out from the Existing Forms

The analysis, research, and observations on understanding the historical character of the area sometimes end up with creating contrast instead of getting in harmony with the existing immediate environment. Obviously, creating contrast is also inspired from the existing, but the resulting product stands out instead of blending in. The contrasting products in the student work are mostly visible in the building shell which is presented in the elevation drawings and digital visualisations.

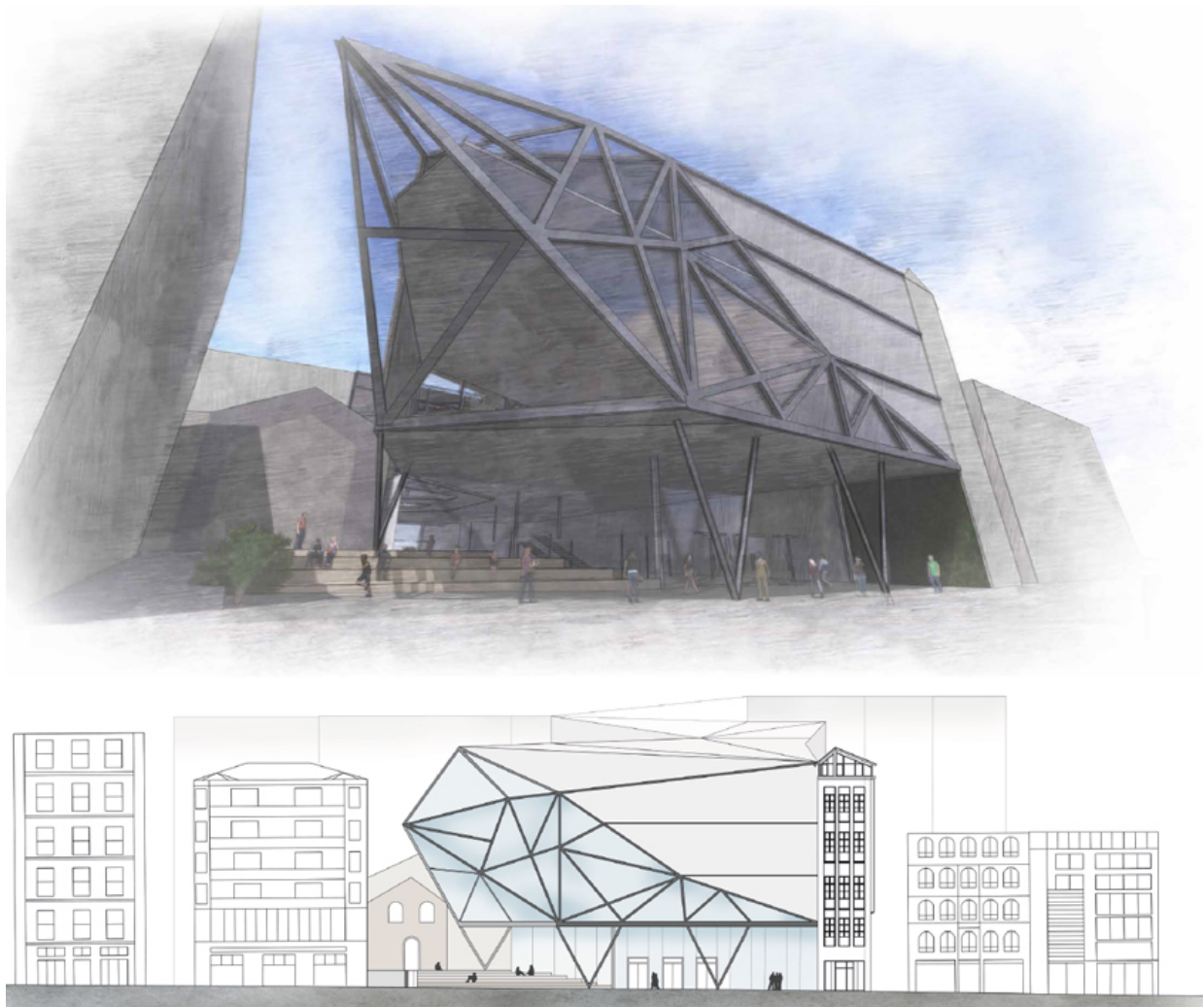


Figure 1: Sample student work for creating contrast with the existing context (source: student Zeynep Aktaş).

Using Historical Construction Elements and Materials

One of the strategies used by the students to utilise the historical context and its elements as design input is to inspire from its materialisation and interpret existing or previous elements or materials of construction with a contemporary perspective. Generally, in the historic areas of Istanbul, which is the location of all examined student work, the use of timber, brick or masonry as construction or façade material is quite common. Therefore, based on the particular character of the locale, students choose to use certain materials in their buildings, mostly as cladding.

Appreciating Existing Historical Elements

The historical characters of an area consist of the coexistence of cultural values, urban patterns and historical elements. Most of the historical elements are local or global landmarks of the city, and their contribution to the design is invaluable. For instance, in one semester, the project site was in Haydarpaşa, and the historical train station was used as a reference and focal point. There are also other historical elements, such remains of a wall or some archaeological site which can be used as a design element. Additionally, the studio allows and encourages students to adaptively reuse buildings with historical values, to make them an active part of their design proposal.

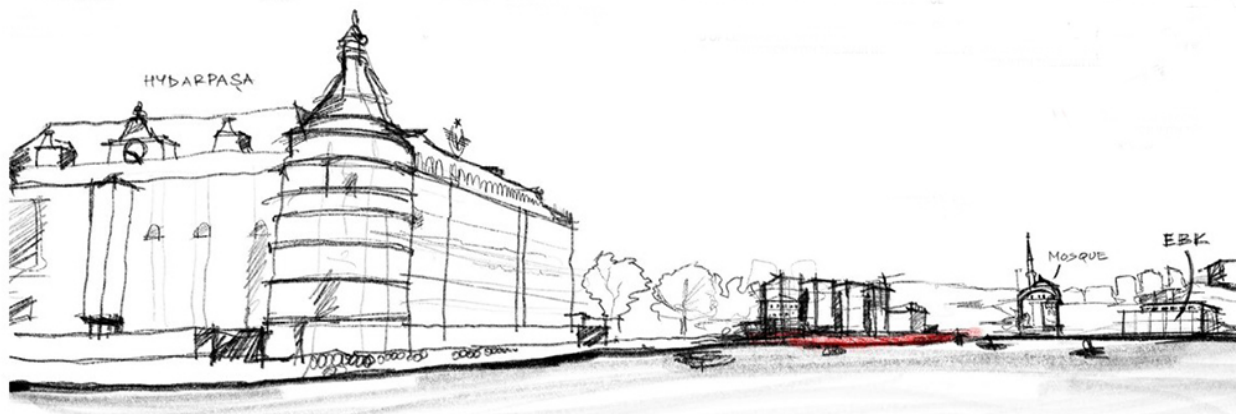


Figure 2: Sample student sketch for appreciating existing historical elements around the site (source: student Akhil Khanvilkar).

Reviving Local Cultural Values

In addition to the tangible elements like street patterns, landmarks and historical buildings, the historical context and value of a location consists of intangible elements, such as its cultural and demographic background. Buildings as symbols and representatives of the history of a location, communicate also its social history. For instance, a building in Beyoğlu (Pera) may revive the social life of the neighbourhood in the late 19th and early 20th Centuries. Moreover, a building designed in Anadolu Hisarı may remind its users about the existence of old factories in the area by including various functions related with the production of those factories in the past.

Quantitative Analysis of Student Work

Student work for the eight semesters was analysed regarding the strategies used during the design process. Each student's work with passing grade was examined for the existence of the five strategies: 1) creating harmony with the existing context; 2) creating contrast to the existing context; 3) using historical construction elements and materials; 4) appreciating existing historical elements; and 5) reviving local cultural values. This study helped to describe which strategies are mostly applied by the students and how they are distributed among semesters (Table 2). One student work may have contained multiple strategies.

Table 2: Analysis on the use of the five strategies by the students.

Semester	Passing students	Students using strategy 1	Students using strategy 2	Students using strategy 3	Students using strategy 4	Students using strategy 5
2018-2019 F	24	18	0	6	8	5
2018-2019 S	97	65	18	31	22	47
2019-2020 F	88	73	3	24	3	36
2019-2020 S	76	56	7	49	23	45
2020-2021 F	112	62	32	45	51	47
2020-2021 S	107	76	9	57	81	52
2021-2022 F	82	66	7	46	21	71
2021-2022 S	74	36	13	24	31	38

The findings of the quantitative analysis reveal that students' attitude towards the use of the historical context as a design input varies between semesters, based on the subject and location of the project. Generally, students feel safer about working in harmony with the historical texture and prefer to blend in with their design proposals. At some extreme cases, students tend towards creating contrast with the existing built environment, especially when they have a thorough analysis about the location and think they know the area well.

Reinterpreting and using historical materials, and appreciating and adaptively reusing existing historical elements are also popular among students, especially in cases where the context allows such intervention. Finally, considering the historical context as an intangible element, and using it in the contents of the project rather than directly on the building itself, is also an anticipated approach among students. However, its reflection on the student work is hard to follow.

CONCLUSIONS

It is crucial that architecture students learn from the design studio, but it is also important that the instructors learn from the students and their habits regarding the design processes. This retrospective study about the influence of historical context on architectural design proposals of students indicated that each semester, based on the location of the project site and the design problem the students' attitudes change. However, there are also common strategies and methods among various locations and design problems. Istanbul as a city with a rich historical background is a suitable location to experiment with different strategies that represent the effect of the historical context on the design processes. However, the approaches developed in this context may be implemented in different locations and contexts, based on their unique characters. Instructors shall work on creating suitable working environments, choose appropriate urban and historical contexts, and formulate proper design problems for the student to apply various strategies for the integration of the historical values of the location with their design proposals.

This approach based on the historical context and its influence on the design proposals shall be applied to other aspects of design studio, derived from the expected learning outcomes of the course. Learning outcomes like the ability to create comprehensive architectural programs, and apply basic principles of environmental, social and economic sustainability are potential topics for similar retrospective studies in the future.

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