T.R.
ISTANBUL SABAHATTIN ZAIM UNIVERSITY
GRADUATE EDUCATION INSTITUTE
DEPARTMENT OF ARCHITECTURE

EXAMINING THE REUSE AND THE REVITALIZATION OF HISTORIC BUILDINGS IN THE CONTEXT OF CONTEMPORARY APPROACHES

Ph.D. DISSERTATION

Ahmet KURNAZ

Istanbul
April, 2024

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This study has been approved in partial fulfillment of the requirements for Ph.D. Degree in Architecture

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DECLARATION OF SCIENTIFIC ETHICS AND ORIGINALITY

This is to certify that this PhD dissertation titled “Examining the Reuse and the Revitalization of Historic Buildings in the Context of Contemporary Approaches” is my own work and I have acted according to scientific ethics and academic rules while producing it. I have collected and used all information and data according to scientific ethics and guidelines on thesis writing of Sabahattin Zaim University. I have fully referenced, in both the text and bibliography, all direct and indirect quotations and all sources I have used in this work.

Ahmet KURNAZ

Istanbul, April 2024

PREFACE

This study, which focuses on the reuse and revitalization of historic buildings, a topic of interest since the beginning of my graduate studies, has been possible due to the support of many.

First, I extend my deepest gratitude to my advisor, Assoc. Prof. Dr. Serhat Anıktar, for his invaluable guidance and contributions. I am also thankful to Assoc. Prof. Dr. Şahika Özdemir, Asst. Prof. Dr. Begüm Bayraktaroğlu, and Asst. Prof. Dr. Zeynep Kerem Öztürk for their mentorship throughout my studies.

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This study was supported by the Scientific and Technological Research Council of Türkiye (TUBITAK) under the BIDEB 2211/A National PhD Scholarship Program and Istanbul Sabahattin Zaim University Scientific Research Projects (BAP) under BAP-2023-28.

ABSTRACT

EXAMINING THE REUSE AND THE REVITALIZATION OF HISTORIC BUILDINGS IN THE CONTEXT OF CONTEMPORARY APPROACHES

Ahmet KURNAZ

Ph.D. Dissertation, Architecture

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This comprehensive study delves into the intricate interactions between historic buildings and contemporary approaches in urban and rural contexts. It focuses on transforming historic sites, including the adaptive reuse of dysfunctional industrial sites, revitalization of rural areas, and integration of contemporary additions into historic buildings. The research aims to uncover sustainable approaches that respect historical and cultural heritage while addressing contemporary needs and fostering tourism.

Through an extensive literature review, this study establishes a theoretical framework based on international conservation standards and theories. It examines the roles of legal and philosophical underpinnings in guiding conservation, adaptive reuse, and revitalization practices. The research methodologies comprise detailed fieldwork, comprehensive data analysis, and active stakeholder engagement, aiming to provide a holistic understanding of these sites' conservation challenges and opportunities.

The findings emphasize the importance of adopting tailored conservation approaches that balance historical integrity with contemporary dynamics. By exploring the interaction between historic buildings and contemporary methods, this research offers actionable recommendations for policymakers, conservationists, and community leaders. These recommendations aim to leverage historical and cultural heritage as a catalyst for transformation and revitalization.

The present PhD thesis includes four peer-reviewed international journal papers. It explores the evolving approaches between historical heritage and contemporary scenarios, highlighting multifaceted challenges and opportunities for urban and rural

transformations. This synthesis investigates the interaction between past and present within the context of industrial archaeology, adaptive reuse, visual perception, and rural tourism, drawing from four distinct case studies.

Keywords: Conservation, Historic Buildings, Transformation, Adaptive Reuse, Contemporary Extensions.

ÖZET

TARİHİ YAPILARDA YENİDEN KULLANIM VE CANLANDIRMANIN ÇAĞDAŞ YAKLAŞIMLAR BAĞLAMINDA İNCELENMESİ

Ahmet KURNAZ

Doktora Tezi, Mimarlık

Danışman: Doç. Dr. Serhat ANIKTAR

Nisan – 2024, 116 +XVI Sayfa

Bu kapsamlı çalışma, kentsel ve kırsal bağlamlarda tarihi binalar ile çağdaş yaklaşımlar arasındaki çok yönlü etkileşimleri ele almaktadır. İşlevini yitirmiş sanayi alanlarının uyarlanarak yeniden kullanımı, kırsal alanların yeniden canlandırılması ve tarihi binalara çağdaş eklemelerin entegrasyonu gibi tarihi alanların dönüşümüne odaklanan araştırma, tarihi ve kültürel mirasa saygı duyarken çağdaş ihtiyaçları karşılayan ve turizmi teşvik eden sürdürülebilir yaklaşımları ortaya çıkarmayı amaçlamaktadır.

Kapsamlı bir literatür taramasıyla uluslararası koruma standartları ve teorilerine dayanan teorik bir çerçeve oluşturan çalışma, koruma, uyarlanabilir yeniden kullanım ve yeniden canlandırma uygulamalarına rehberlik eden yasal ve felsefi dayanakların rollerini incelemektedir. Detaylı saha çalışması, kapsamlı veri analizi ve paydaş katılımını içeren araştırma metodolojileri, bu alanların koruma, uyarlanabilir yeniden kullanım ve yeniden canlandırma zorlukları ve fırsatları hakkında bütünsel bir anlayış sağlamayı amaçlamaktadır.

Elde edilen bulgular, tarihi bütünlük ile çağdaş dinamikler arasında denge kuran özel koruma yaklaşımlarının benimsenmesinin önemini vurgulamaktadır. Tarihi binalar ile çağdaş yaklaşımlar arasındaki etkileşimi inceleyen araştırma, tarihi ve kültürel mirası dönüşüm ve yeniden canlandırma için bir katalizör olarak kullanmayı amaçlayan politika yapıcılar, korumacılar ve topluluk liderleri için uygulanabilir öneriler sunmaktadır.

Bu doktora tezi, dört adet hakemli uluslararası dergi makalesini içermektedir. Tarihi miras ile günümüz arasında gelişen yaklaşımlar, kentsel ve kırsal dönüşümler için çok yönlü zorluklar ve fırsatlar sunmaktadır. Bu sentez, sanayi arkeolojisi, uyarlanabilir

yeniden kullanım, görsel algı ve kırsal turizm bağlamında geçmiş ile bugün arasındaki etkileşimi dört farklı vaka çalışması üzerinden incelemektedir.

Anahtar kelimeler: Koruma, Tarihi Yapılar, Dönüşüm, Yeniden İşlevlendirme, Çağdaş Ekler.

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LIST OF ABBREVIATIONS

AHP : Analytic Hierarchy Process

ERIH : European Route of Industrial Heritage

OECD : Organisation for Economic Co-operation and Development

SPSS : Statistical Package for the Social Sciences

SWOT : Strengths, Weaknesses, Opportunities, Threats

TICCIH : The International Committee for the Conservation of the Industrial Heritage

CHAPTER 1

INTRODUCTION

In urban development and architectural heritage, the discourse around the conservation and revitalization of historical buildings and the transformation of urban and rural landscapes has gained more prominence in recent years. As societies evolve, the imperative to adapt old structures to meet contemporary demands while preserving historical integrity has emerged as a central theme in architectural and urban planning discussions.

This thesis delves into the complexities of urban and rural revitalization, focusing on conservation strategies for historical buildings, the adaptive reuse of industrial heritage, the integration of contemporary extensions, and sustainable development in rural settings. Through a detailed exploration of these topics through four distinct cases, the thesis aims to uncover the nuanced interplay between conservation and contemporary approaches and the role this balance plays in shaping the future of our built environments.

The first case study delves into the conservation and the adaptive reuse of urban industrial sites that have become enmeshed within the urban fabric due to the relentless expansion of cities. These spaces, once bustling centers of production, now present unique opportunities for urban renewal and community development. The transformation of such areas is not only merely a physical conversion but also a reimagining of urban spaces that respect their historical essence. The Beykoz Leather and Shoe Factory in Istanbul stands as a poignant case study within this context. This factory's transition from an industrial site to a potential cultural and social hub exemplifies the broader challenges and opportunities facing similar urban areas worldwide. This research explicitly targets this factory, an emblematic site with profound historical and socio-economic bearings. It explores how such spaces can be sensitively conserved and repurposed to fulfill contemporary urban needs while honoring their historical essence and cultural significance. The adaptive reuse of such sites underscores a commitment to sustainable urban development, marrying the past's architectural and cultural narratives with the present's needs and aspirations. By examining the processes and strategies employed in repurposing the factory, insights

can be gleaned into the principles guiding industrial heritage revitalization within the urban fabric.

The second case study expands the discourse to a broader spectrum of historic industrial buildings that have outlived their original functions due to shifts in technology, economy, and industry paradigms, as scholars like James (2006) and Foster (1995) discussed. Preserving historical buildings transcends mere architectural conservation; it embodies the continuity of cultural, social, and economic narratives through time. The passage from active industrial use to modern-day relevance for buildings and sites reflects the dynamic evolution of societal values and technological capabilities. Focusing on transforming historical industrial buildings into cultural and educational venues, such as energy museums, this segment of the research zeroes in on transforming these structures into energy museums, with a particular lens on the Santralistanbul project. The aim here is to dissect the processes and outcomes of refunctionalizing these buildings and contribute to preserving industrial architectural values and heritage. The example of Santralistanbul, a former power generation factory now serving as an energy museum, illustrates the potential of historical industrial sites to contribute to cultural education and community identity.

The third case study of the thesis transitions to the urban scale, probing the complex approaches of designing and implementing contemporary extensions to historical buildings within urban contexts. The challenge of integrating contemporary extensions into historical buildings represents a critical issue in modern architecture and urban planning. This delicate process involves negotiating between the past's demands and the present's needs, carefully considering aesthetic, functional, and contextual factors. The section explores the principles and practices that govern successful integrations by examining case studies of contemporary extensions to historic buildings. It addresses how architects and planners can honor historical contexts while introducing modern elements that enhance functionality and accessibility. The focus is on the visual, material, and spatial strategies to ensure that extensions contribute positively to the existing urban landscape and cultural heritage. This research, guided by visual aesthetics, historical integrity, and modern utility principles, seeks to formulate a coherent set of design strategies and evaluative criteria for contemporary architectural interventions in historical settings. The goal is to ensure that new developments respect and harmonize with the historical and cultural essence of existing structures and

enhance their functionality and integration into the contemporary urban fabric, thereby fostering a symbiotic relationship between the old and the new.

The thesis's fourth and final case study shifts the geographical and contextual focus to the rural landscape, specifically examining the potential for refunctioning historical rural structures for sustainable tourism with an in-depth case study of the historical Sile district and Akcakese Village. This research segment is dedicated to uncovering how the adaptive reuse of rural architectural heritage can catalyze sustainable development, addressing challenges such as depopulation, economic decline, and the erosion of cultural traditions. By exploring strategies for revitalizing and refunctioning rural historical buildings, this study aims to contribute to the sustainable growth of rural tourism, thereby enhancing the economic viability and cultural vitality of rural communities. It examines the strategies for refunctioning idle historical buildings, introducing contemporary additions, and engaging local communities in sustainable tourism initiatives. The sustainable development of rural areas through tourism offers a pathway to revitalizing these landscapes while preserving their unique cultural and architectural heritage.

As a result, the intricate situation between preservation and modernization in urban and rural contexts reflects the broader challenges contemporary society faces in honoring its past while navigating the demands of the future. This discussion addresses how preserving historic buildings safeguards physical structures and maintains the intangible heritage that defines community identity and continuity. This thesis traverses the spectrum of transformations from industrial relics to rural retreats through different case studies, uncovering the principles, challenges, and opportunities inherent in these processes. The lessons gleaned from these diverse experiences are instrumental in guiding future urban and rural revitalization endeavors, ensuring that our built heritage continues to enrich and inform our collective journey.

1.1. Purpose and Scope of the Study

The primary objective of this integrated research endeavor is to thoroughly examine the multifaceted challenges and opportunities associated with conservation, the adaptive reuse, and revitalization of historical structures across varying contexts and case studies: from urban industrial landscapes and historical industrial sites transitioning to contemporary uses, to the integration of modern extensions within

historic urban fabrics, and the sustainable tourism-driven revitalization of rural heritage sites. These studies collectively underscore a pivotal concern within contemporary architectural and urban planning discourses: balancing preserving cultural and historical heritage with adapting to current and future socio-economic, environmental, and technological needs. This overarching theme is dissected into distinct yet interconnected research foci, each contributing to a comprehensive understanding of historical structures' adaptive reuse and revitalization as a critical element of sustainable development, cultural continuity, and urban and rural regeneration.

In synthesis, the cumulative scope of these studies represents a comprehensive and multidisciplinary inquiry into the adaptive reuse of historical structures, spanning urban and rural contexts and addressing a spectrum of cultural, economic, technological, and environmental considerations. Through this integrated research approach, the aim is to forge a path toward sustainable architectural, and urban and rural planning practices that respect and revitalize our historical heritage while accommodating the evolving needs of contemporary and future societies. This scholarly endeavor aims to contribute to academic discourse and offer pragmatic, innovative solutions that can inform policymaking, architectural design, and urban and rural planning strategies worldwide.

1.2. Original Value and Significance of the Study

The collective body of research presented in the four case studies in this thesis provides a deep and nuanced exploration into the realms of architectural conservation, urban and rural revitalization, adaptive reuse, and the transformation of historical structures within diverse environmental and cultural contexts. This synthesis of studies sheds light on the multifaceted challenges of preserving historical architecture. It also illustrates the innovative methodologies and theoretical approaches employed to ensure these structures continue to serve contemporary societal needs while maintaining their historical and cultural significance.

The thesis meticulously examines these case studies, highlighting the unique challenges and opportunities presented by architectural heritage conservation. The original value of this study lies in its detailed historical analysis, its focus on the specific socio-economic and cultural dynamics of buildings, and its comparative

approach, which illuminates the shared challenges and diverse strategies employed in transforming historic buildings into functional spaces that cater to contemporary needs. By providing a comprehensive narrative that links the buildings' past with their potential future roles, the study contributes significantly to the discourse on urban and rural revitalization and heritage conservation. It offers insights into how historical sites, often perceived as obsolete, can be transformed into vibrant community assets that preserve historical identity. This research is particularly significant as it addresses a gap in the literature regarding the specific conservation and reuse strategies applicable to architectural heritage, thereby offering a model for similar projects worldwide.

The thesis underscores the importance of these historical sites as repositories of social, economic, and technological history, advocating for their adaptive reuse to preserve cultural memory while contributing to current urban and rural landscapes. This enriches the architectural literature by providing a global overview of adaptive reuse practices. Also, by analyzing contemporary extensions to historical buildings, the research provides valuable insights into how modern interventions can complement and enhance historical contexts, ensuring heritage buildings' continued relevance and functionality. This contributes to a better understanding of how contemporary architecture can respectfully coexist with historical environments, offering a balanced approach to urban and rural development that honors the past while accommodating future needs.

By focusing on stakeholder perspectives, the research offers a participatory framework for adaptive reuse and revitalization, emphasizing the importance of community involvement in the conservation process. This study contributes a critical perspective on regeneration, highlighting the need for strategies that balance preservation with innovation to ensure the viability and vibrancy of heritage sites.

Overall, the combined insights from these case studies underscore the complexity and diversity of challenges inherent in historical structures' conservation and adaptive reuse. Together, they contribute a rich, multi-dimensional understanding of the field, advocating for approaches sensitive to historical contexts, responsive to contemporary needs, and inclusive of community perspectives. This body of work significantly advances the academic discourse on architectural conservation, offering valuable

theoretical contributions and practical guidelines that can inform future projects and policies to preserve our built heritage in an ever-evolving world.

1.3. Methods

This research integrates diverse methodologies from four distinct investigations, each focusing on the transformation, conservation, and sustainable revitalization of historical sites within urban and rural settings. Table 1.1 below provides a summary of the case studies in the thesis.

Table 1.1: Case Studies in the Thesis

Title	Focus	Methods Used	Results
Examination of Methods Employed in Industrial Archaeology Conservation: Case of Beykoz Leather and Shoe Factory	• Focuses on the conservation and adaptive reuse of industrial archaeology buildings. • Focuses on conservation methods for Beykoz Leather and Shoe Factory. • Discusses the importance of adapting buildings to contemporary needs. • Discusses the transformation qualities and evaluation of industrial buildings.	• Data collection for five years, involving on-site observation and interviews. • Conservation methods determined by TICCIH, ERIH, and Rolf Höhmann.	• Emphasizing multifunctional use of industrial areas for public benefit. • The preservation of unique features during refunctioning. • Importance of conservation of industrial archaeology for architectural and social memory. • Preservation methods include complete conservation, conservation with little intervention, reuse with different functions, and conservation providing museum function.
From Power Plant to Energy Museum: Spatial Perception of Santralistanbul	• Focuses on Silahtaraga Power Plant transformation to Santralistanbul. • Adaptive reuse of industrial buildings to revitalize with new functions. • Conservation of industrial heritage through adaptive reuse. • De-industrialisation's impact on regions in the 20th century. • Industrial heritage's social and aesthetic values. • Examines the spatial effect of old-new technologies in industrial areas.	• Literature study and fieldwork conducted to evaluate spatial perception. • Data analysis methods.	• Examining spatial perception of Santralistanbul under ten sub-topics. • Proposing adaptive reuse policies for historical industrial buildings. • Examining the spatial impact of old-new technologies in industrial areas. • Evaluating qualities of energy museum buildings within an industrial archaeology context. • Identifying adaptive reuse policies. • Evaluating existing structures and historical data to assess spatial perception. • Highlighting the significance of preserving historical identity in re-functioning buildings.
Visual Perception and Contextual Relationship of Contemporary Extensions and Historical Buildings	• Investigates visual perception and context relationship in contemporary extensions. • Focuses on design methods (repetition, authenticity, harmony, and contrast) for contemporary extensions and historical buildings. • Examines internationally valid legislation and regulations on restoration and preservation.	• Detailed literature review on restoration, conservation, and contemporary extensions. • Survey with 223 respondents. • Data analysis methods using SPSS to compare design elements of extensions.	• Evaluating design methods' influence on contemporary extensions' visual perception. • Evaluating 15 contemporary extensions designed by different architects.
Examination of Rural Architecture That Shapes Sustainable Tourism in Emerging Economies Through Stakeholder Perspectives: Sile, Istanbul	• Focuses on sustainable rural tourism to revitalize historical areas. • Studies on rural architecture refunctioning in the historical Sile district. • Focuses on the preservation of historical rural buildings for sustainable rural tourism.	• SWOT matrix and Analytic Hierarchy Process (AHP) approach. • SWOT analysis to understand revitalization strategies for Akcakese Village. • AHP for decision-making in architectural research.	• Developing policies for sustainable tourism with a participatory approach. • Creating a priority ranking framework for rural sustainable tourism strategies. • Emphasising preserving historical rural buildings for sustainability. • Analyzing factors shaping rural architecture in Akcakese Village for tourism.

The methodologies encompass exhaustive literature reviews, detailed fieldwork, comprehensive data analysis, and stakeholder engagement. These methods collectively aim to understand and facilitate the sustainable integration of historical and cultural heritage into contemporary socio-economic frameworks, emphasizing cultural preservation, adaptive reuse, and revitalization.

Literature Review and Theoretical Framework: The methodological approach begins with a thorough literature review, establishing a comprehensive theoretical framework for each study area. This phase involves a detailed examination of historical contexts, conservation theories, legal frameworks, and previous studies in the literature relevant to the conservation and revitalization of historic buildings and architecture.

The literature review spans various international conventions and charters, such as the Venice Charter, UNESCO's conventions, and the ICOMOS charters, setting the stage for globally recognized conservation and restoration practices. In addition to legal and theoretical frameworks, the literature review extends to analyzing contemporary extensions to historical buildings across various global contexts. This review aids in formulating hypotheses regarding the visual perception and contextual relationships between new and old architectural elements. The literature review's breadth ensures a robust theoretical foundation, facilitating a nuanced understanding of the multifaceted challenges and opportunities presented by the conservation and adaptation of historical sites.

Fieldwork and Data Collection: The fieldwork component is integral to methodology, encompassing a series of systematic, detailed investigations across different sites. Fieldwork methods include direct observation, photographic documentation, structural assessments, and collecting environmental and socio-cultural data. These activities capture the intricate details of each site's current state, historical significance, and socio-economic context.

Collaborative efforts with local entities and specialists in architectural conservation enhance the fieldwork phase. Engagements with groups such as the Kundura Hafıza unit and various stakeholders in rural communities provide depth to the data collection process. This collaboration includes conducting comprehensive interviews with former employees and residents, offering rich, diverse perspectives on each site's

historical and contemporary relevance. Surveys and questionnaires form another critical data collection method, targeting a broad spectrum of respondents, including architects, interior designers, tourists, and local stakeholders. This approach ensures a holistic view of the site's architecture and culture, facilitating a multi-dimensional conservation and potential analysis of adaptive reuse.

Analytical Methods: The analytical phase of research employs a blend of qualitative and quantitative methods to process and interpret the collected data. This involves evaluating the applicability of various conservation strategies, from minimal intervention to complete functional repurposing, within the specific contexts of the study sites. The analysis examines architectural, environmental, and socio-economic factors to assess the potential impacts of different conservation approaches.

Innovative analytical tools, such as the SWOT-AHP (Strengths, Weaknesses, Opportunities, Threats - Analytic Hierarchy Process) hybrid model, dissect complex data sets. This multi-criteria decision-making tool enables a detailed evaluation of the sites' conditions, identifying critical factors influencing sustainable tourism and heritage preservation. The SWOT-AHP analysis helps prioritize conservation strategies and develop actionable recommendations tailored to each site's unique circumstances.

Stakeholder Engagement and Participatory Methods: Stakeholder engagement is a cornerstone of methodology, ensuring that the research process is inclusive, participatory, and reflective of diverse perspectives. The mixed-methods approach, combining qualitative interviews and quantitative surveys, facilitates broad stakeholder involvement in the research. This engagement ensures that the conservation strategies and development proposals are grounded in the community's needs and aspirations.

The participatory approach extends beyond data collection, involving stakeholders in the decision-making process and fostering a sense of ownership and commitment to the conservation and revitalization initiatives. This inclusive methodology enriches the research with varied insights and enhances the likelihood of successful implementation and long-term sustainability of the proposed interventions.

In summary, the methodology of the thesis outlines a comprehensive, multifaceted approach combining theoretical, empirical, and participatory research elements. The

thesis offers a holistic framework for analyzing, understanding, and addressing the complexities of conserving and revitalizing historical sites for cultural heritage preservation.

The methodologies detailed herein provide a robust foundation for generating nuanced insights and practical strategies to foster the sustainable integration of historical and cultural heritage into contemporary social and economic landscapes.

CHAPTER 2

EXAMINATION OF METHODS EMPLOYED IN INDUSTRIAL ARCHAEOLOGY CONSERVATION: CASE OF BEYKOZ LEATHER AND SHOE FACTORY[1]

2.1. Introduction

Humans are the only elements of the habitat to produce their structures for protection, shelter, production, and accomplishment of other needs (Çiftçi and Arpacıoğlu, 2021). To fulfil their needs, humans initiated the process of creating an artificial environment within the habitat. Constant changes take place across people, societies, needs, natural environment, and artificial environment, which create variability in the needs and use of buildings, forcing the architecture to change (Ahunbay, 2010).

When buildings cannot meet the changing social, historical, cultural, economic, technological, and environmental needs of their era, they lose their functions and get abandoned (Altınoluk, 1998). Although these buildings become old and are not functional, they continue to exist physically because their structural lives do not come to an end (Cengizkan, 2006). For the buildings to stay in use and not become inactive, they need to keep up with rapid changes and continue to be useful.

Industrial areas remained on the periphery of cities at the time they were built. But, as a result of the growth and expansion of cities over time, they have become a part of the urban areas and are one of the most important potential areas in the ongoing transformation process (Atagök, 2000). With proper spatial planning, these large areas can become a breathing point for growing cities as peripheries expand. Therefore, the conservation and reuse of these areas ensure that people of the cities are aware of conservation and are willing to turn these areas into places embraced by the citizens.

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[1] This chapter is based on the paper: Kurnaz, A. and Kerem Öztürk, Z. (2023). Examination of methods employed in industrial archaeology conservation: Case of Beykoz leather and shoe factory. Journal of Architectural Sciences and Applications, 8(2), 624-638. https://doi.org/10.30785/mbud.1286703

The history of conservation dates back to the first ages. It can be seen that the temples were preserved in an orderly manner in the early ages. The awareness of preserving the historical and cultural values of the buildings and transferring them to the next generations increased after rapid urbanization. In the 20th century, methods of preserving industrial archaeology became an important topic of discussion in architectural literature.

Beykoz Leather and Shoe Factory is an area officially recognized as a historical monument and where all cultural and natural assets are under legal protection. The reason for choosing this area within the scope of the research is that it is one of the industrial facilities with the highest social and economic capacity when it is actively used. Factory, one of the rare examples of industrial cultural heritage that had operated uninterruptedly with its history dating back to the early 1800s, has a rich history covering the Ottoman Empire and the Republic of Turkey. The factory was a pioneer for the Ottoman Empire in terms of modernization with leather products. It was established in Beykoz, one of the most magnificent points of the Bosphorus. It is one of the biggest factories in the Balkans. In this historical area, which is one of the most beautiful points of the city due to its location, the industrial structures that have been challenged over the years have still managed to survive. For this reason, the protection of the area is very important for the city.

Beykoz Shoe and Leather Factory was a structure that was constantly renewed, articulated, and evolved with efforts such as capacity increase, and changes in production methods and technologies. The industrial area, which grew over time as a living organism, had structures that differed in quality due to changes in construction techniques and architectural understanding over time (Küçükerman, 2020). Therefore, the investigation of the Beykoz Leather and Shoe Factory is an important case study for architectural literature.

Although the conservation and reuse of many industrial archaeology works have been widely discussed in different academic studies, the methods of conservation and reuse of the Beykoz Leather and Shoe Factory have been sparsely studied. Therefore, this study focused on the methods that were used for the conservation and reuse of Beykoz Leather and Shoe Factory; a case study was conducted to fill the aforementioned gap in the literature.

2.1.1. Industrial Archeology

Industrial buildings that emerged with the industrial revolution have met the needs of cities for many years. Buildings that were constructed away from the city centers for the sake of people's health, the need for large land areas, and proximity to water sources, became structures within the city center. They paved the way for the development and growth of the cities, shaped them, and allowed cities to grow in line with industry. However, historical factories have closed or lost their functions over time across the world due to being unable to operate efficiently, being technologically inadequate, and polluting city centers (Föhl, 1994).

Industrial archaeology was first introduced in England (an active center of industrialization) in the second half of the 20th century when industrial structures were threatened with extinction. After the issue of urban transformation came to the forefront and awareness regarding the preservation of historical culture grew, the dysfunctional industrial structures that remained in the city centers were accepted as an important cultural heritage and the concept of industrial archaeology became widespread.

Industrial heritage included all units that emerged as a result of the industrial process, together with their equipment. In this context, industrial archaeology includes all fields related to various industries (Köksal, 2005). Out-of-use architectural structures, production equipment, building parts, and settlements, along with the natural and urban landscapes these structures are placed within constitute the industrial heritage (ICOMOS, 2013). The International Committee for the Conservation of the Industrial Heritage (TICCIH), which carries out activities to preserve industrial heritage, defines industrial heritage in the Nizhny Tagil Charter published in 2003 as follows: Industrial heritage consists of the remains of industrial culture that are of historical, technological, social, architectural or scientific value. These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted, and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education (TICCIH, 2003).

With the first attempts to preserve industrial buildings as well as buildings that can be included in the scope of cultural heritage according to conservation criteria, the methods of preserving industrial archaeology, defined as the act of researching and uncovering old industrial buildings, became an important topic of discussion in the architectural literature in the 20th century.

2.1.2. Industrial Archaeology Conservation Methods

The change in needs, the emergence of new production methods, and the development of technology necessitated the change of factory structures (Günay, 2002). In particular, after the Second World War, some changes took place in the use of industrial structures around the world. In this period, the industrial facilities that were functionally obsolete and could not keep up with the change became inadequate and lost their functions over time. Areas with historical background and value were abandoned and left idle (Altınoluk, 2000).

After the functionality of industrial buildings came to an end, their conservation and reuse intensified towards the middle of the 20th century. The formation of historical and environmental awareness over time was a factor that triggered the conservation and reuse of industrial archaeology (Atagök, 2000).

Conservation and transformation of these structures, which today reveal themselves as industrial archaeology, are common all over the world. This is primarily because these areas shed light on the historical background of the society and the cities. Reviving these buildings, instead of watching them disappear, is an indicator of the value attributed to the past. In this context, cultural heritage buildings on a global scale are considered within the framework of international criteria, their values are recognized, and efforts are made to regain their place in contemporary life.

The correct conservation and revival of an industrial building or facility can be achieved by determining the necessary conditions and choosing the appropriate preservation method accordingly. If the historical and cultural values of the industrial heritage are determined comprehensively, it can be ensured that said heritage is protected by appropriate methods (Köksal, 2005). The World Heritage Committee and the Council of Europe are working on the identification, research, and scientific analysis of the heritage, and the determination of conservation methods according to its unique nature. From this point of view, structures within the scope of industrial

heritage are protected by various methods in line with the criteria set by organizations such as TICCIH and ERIH (European Route of Industrial Heritage). The protection methods specified by all these institutions and organizations are grouped under four preservation methods categorized by Höhmann: Complete conservation without any intervention or conservation without providing a new function with minimum intervention, conservation by providing it with a function similar to its old function with little intervention, conservation providing museum function, reuse with a different function (Höhmann, 1992). The methods applied in the conservation of industrial archaeology may differ based on the buildings and structures.

2.1.3. Beykoz Leather and Shoe Factory

In 1810, Tabakhane-i Klevehane-i Âmire was established on the coast in Beykoz (Istanbul), amidst wide plains and rich water resources. This facility produced military shoes and boots for the Ottoman army. Beykoz Leather and Shoe Factory was one of the important facilities of the traditional leather industry that faced the Industrial Revolution that took place in Europe at the beginning of the 19th century. This factory was one of the rare facilities where the industrial revolution was implemented and long-lasting continuity could be achieved. Various breakthroughs were experienced over time, and the boundaries of the factory expanded accordingly. In 1842, steam engines started to be used in the factory and the technical equipment of the facility was improved. During this period, the factory was equipped with a 40-horsepower steam engine, two steam boilers, and 70 leather wells. In 1912, production capacity was increased with two diesel engines imported from Europe, new machines, and another steam boiler (Küçükerman, 2020).

After falling under Sümerbank's ownership in 1933, the name of the facility was changed to Industrial Facility of Sümerbank for Leather and Shoe in 1939 (Toros, 1954). From 1936 to 1940, the number of workers at the factory nearly doubled. Thus, Beykoz Leather and Shoe Factory created a significant level of employment in the Beykoz district (Küçükerman, 1988). The wedding hall, summer and winter cinemas in the Beykoz Leather and Shoe Factory clearly show the effects of the factory on social life. The factory was instrumental in meeting on common ground, having neighbourly relations, and social sharing.

Although Beykoz Leather and Shoe Factory increased its production by adding many manufacturing departments to its structure, the factory recruited its last workers in 1984 (Küçükerman, 2020). Production ceased in 1999 due to negative financial indicators and phosphorus pollution caused by the factory. The factory was privatized in 2003 and production was completely closed.

Structures for warehouse areas, technical areas, and similar functions have been altered as the production scheme has changed over time, completely in line with the needs. 53 buildings in the industrial area have ceased to operate. The area consisted of many different structures, from small workshops that began to be built at the beginning of the 19th century, to industrial-functional structures that evolved into more complex structures (Küçükerman, 1988). The area had buildings allocated for manufacturing, social events, warehouses, and offices, along with 32 flats in four blocks with sea views. In addition, the factory area included forest areas. It had a 350-meter front to the Bosphorus. The orientation, positioning, and geometry of the buildings in the area are planned in such a way that the use of daylight in architecture is abundant. The amount of sunlight taken into the buildings is sufficient to meet the users' needs in terms of quantity and quality (Çiftçi and Arpacıoğlu 2021).

Today, the entire land area of 182,250 square meters of the Beykoz Leather and Shoe Factory has turned into a movie plateau that hosts a museum, an open-air concert and cinema area, and an indoor movie theatre. There are 25 registered industrial structures in this area. During the transformation, the natural historical texture and identity of the industrial area were preserved and maintained. This industrial area still contains many traces of the past.

An evaluation of the present structure together with its old manufacturing buildings, social structures, and green areas, allows us to describe this area as a breathing point for the urban fabric, both culturally and recreationally.

The oldest and at the same time the most common production area of the Ottoman industry is leather. Beykoz Leather and Shoe Factory is a prominent factory of the Ottoman industry with its leather products. Winning a gold medal at the Vienna International Fair in 1877 can be shown as a success proving the quality of Beykoz Leather and Shoe Factory's production (Küçükerman, 1988). The area is one of the

rare factories that is also socially active and has created a workers' neighbourhood culture around it.

2.2. Material and Method

The present study focuses on examining the transformation of the Beykoz Leather and Shoe Factory area, investigating the qualities of the buildings in the area, and evaluating them in the context of industrial archaeology. The study aimed to determine whether each of the four conservation methods determined by Höhmann (1992) is preferred for the buildings of the Beykoz Leather and Shoe Factory.

(1) Complete conservation without any intervention or conservation without providing a new function with minimum intervention: This method aims to preserve industrial archaeology as an outdoor museum.

(2) Conservation by providing it with a function similar to its old function with little intervention: In this method (preferred for industrial areas), some older functions are preserved alongside the development of some new functions.

(3) Conservation providing museum function: It is a method that aims to re-function buildings as museums. This method applies to buildings that are capable of presenting sufficient technical information about their era and have not endured much damage nor lost a lot of their original equipment.

(4) Reuse with a different function: In this method, the aim is to integrate the building and the space into the present day and bring it back to life with a different function.

Literature review, archive review, on-site examination, and documentation of the structures related to the study area were used within the scope of the study. Field trips were made with the Kundura Hafıza (Shoe Memory) unit established within the Beykoz Leather and Shoe Factory. The details of the one-to-one interviews with more than 200 former factory employees and their relatives brought together by the Kundura Hafıza team, photographs taken during the factory's active period, documents, and drawings were examined. In addition, the archive of Kundura Hafıza, industrial machinery, materials, and personal belongings of the employees from the factory's active period was examined and photographed on site in the new museum area in the building, which had been the carpentry shop of the factory at that time.

Data collection was carried out in 5 years between 2018 - 2022. Data were collected through on-site observation, analysis of relevant documentation, and interviews with the Kundura Hafıza team during multiple site visits. The transformation of many buildings that took place in this process was observed on-site during field visits. Reinforcement work in structurally weak buildings was documented as well.

2.3. Findings and Discussion

Höhmann (1992) described four methods for the conservation of industrial archaeology. These methods can be listed as complete conservation without any intervention or conservation without providing a new function with minimum intervention; conservation by providing a function similar to the old function with a little intervention; conservation by providing a museum function; and reuse with a different function. Different methods can be preferred in line with different requirements for the conservation and reuse of industrial archaeology. At this point, the following objectives should be considered as a priority when making decisions:

•To exhibit the industrial heritage,

•To carry out activities that will increase the knowledge and awareness of the public,

•To obtain information and learn examples from international practices and institutions, and

•To evaluate the economic aspect in the context of implementation and sustainability of decisions.

The present study examined the transformation of Beykoz Leather and Shoe Factory in terms of four methods of Höhmann (1992) for the conservation of industrial archaeology.

2.3.1. Complete Conservation Without Any Intervention or Conservation Without Providing a New Function with Minimum Intervention

Preserving industrial archaeology as it is and ensuring that it is passed on to future generations is a process with many historical and cultural benefits. In addition, the conservation of historical buildings is often more economical than constructing new buildings. The Venice Charter (ICOMOS, 1964) states: “The conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable, but it must not change the lay-out or

decoration of the building". Conservation of vacant and unused buildings that lost their function can be achieved by applying the right conservation principles and evaluating the structures correctly. Based on the historical and cultural function of the conservation; traces, equipment, data, and details of the identity and original function of the building should be preserved and integration of the old function with the building should be emphasized and brought to the fore.

An on-site examination of the Beykoz Leather and Shoe Factory helped determine whether the conservation method of complete conservation without any intervention or conservation without providing a new function with the minimum intervention was preferred. Many buildings and areas have been protected by this method in the industrial area. The area of the leather cabinets, where raw leather was processed and made ready for shoe production by resting in some chemical liquids, is subject to the conservation method of complete conservation without any intervention or conservation without providing a new function with minimum intervention (Figure 2.1). Industrial archaeology has allowed the historical leather cabinets of the factory, to be restored and preserved, as they were in earlier times (Figure 2.2). Also, the old and new shoe factory buildings, tire operation revision buildings, raw leather warehouse (Figure 2.3), water tank, and fire station located in the industrial area are preserved as they were.

Figure 2.1: Conservation of leather cabinets without any intervention

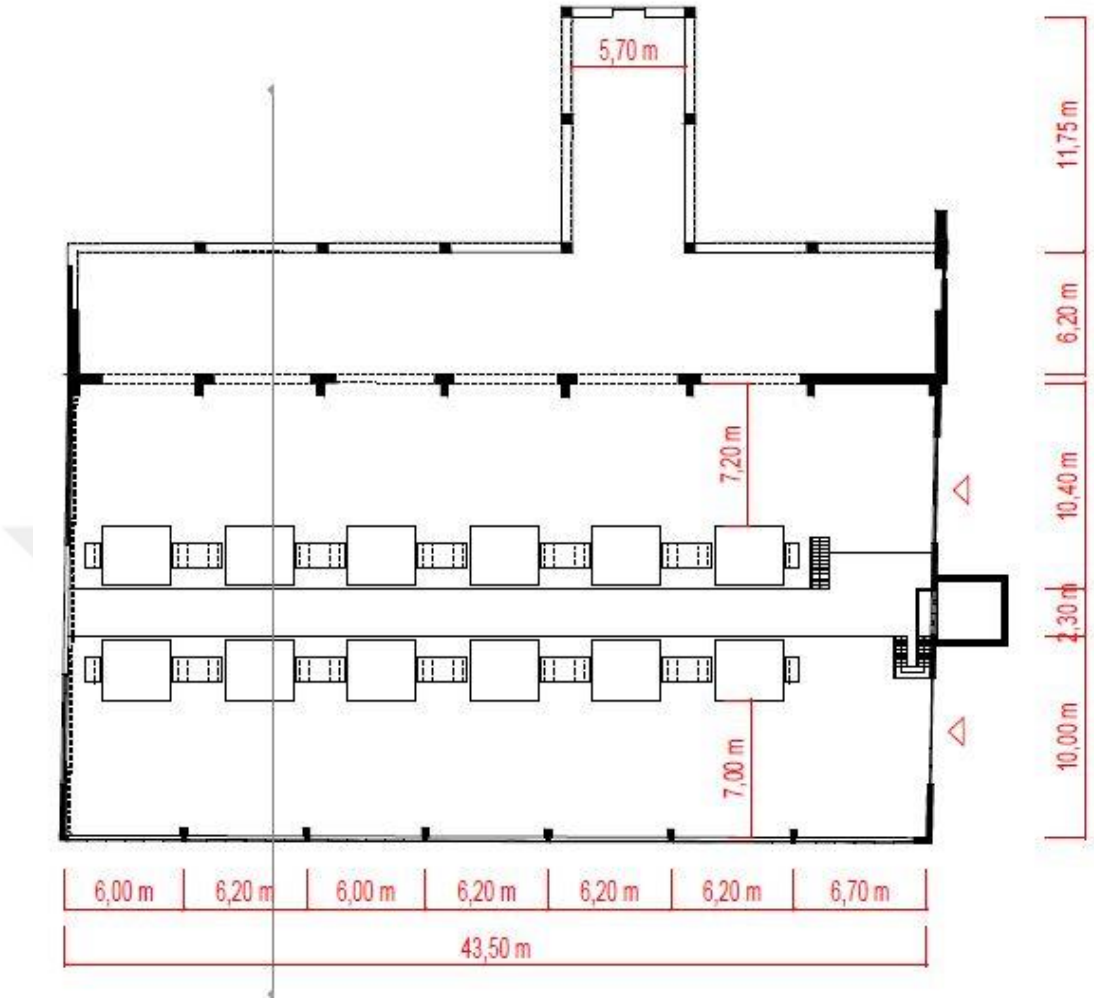


Figure 2.2: Plan of conservation of leather cabinets without any intervention

Source: Beykoz Kundura, 2022

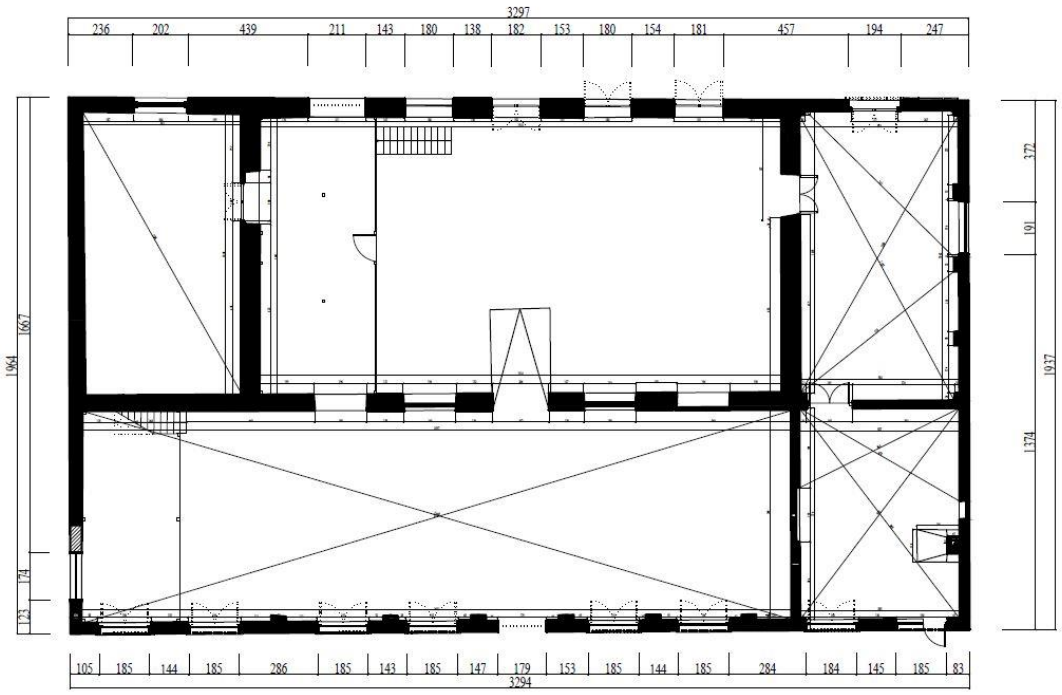


Figure 2.3: Plan of conservation of raw leather warehouse without any intervention

Source: Beykoz Kundura, 2022

It is important to identify the industrial buildings and to preserve them as they are, together with the parts that convey information about the production style of the period and their environment.

2.3.2. Conservation By Providing a Function Similar to The Old Function with A Little Intervention

Another approach adopted in conservation methods is to preserve buildings with very little intervention. This method ensures that the building is protected along with the continuity of its us to prevent it from falling into an idle state again. In terms of ensuring the continuity of use, it is primarily evaluated whether the function of the building adapts to today's needs.

The charter of Carta Del Restauro states that it is acceptable to provide new uses to living, that is, standing monuments, only not far from their original function and where necessary adaptations can be made to the building in such a way that it does not cause significant damage (ICOMOS, 1931).

An on-site examination of the Beykoz Leather and Shoe Factory helped determine whether the conservation method of conservation by providing a function similar to the old function with a little intervention was preferred. There are many buildings and areas protected by this method in the industrial area. The warehouse area used for storage is subject to this conservation method (Figure 2.4). The building, which was used as a sheet metal warehouse during the factory's active period, is used as a storage area for hundreds of hand tools and machines used in the factory period. The office sections in the new shoe factory building, built towards the end of 1950, have been transformed into the accounting and human resources offices of Beykoz Kundura today. The Czech house, which was used as an accommodation and working area for engineers at the time it was built, is used as a boutique hotel with a function close to its former function (Figure 2.5).

Figure 2.4: Conservation of the warehouse by providing a function similar to the old function

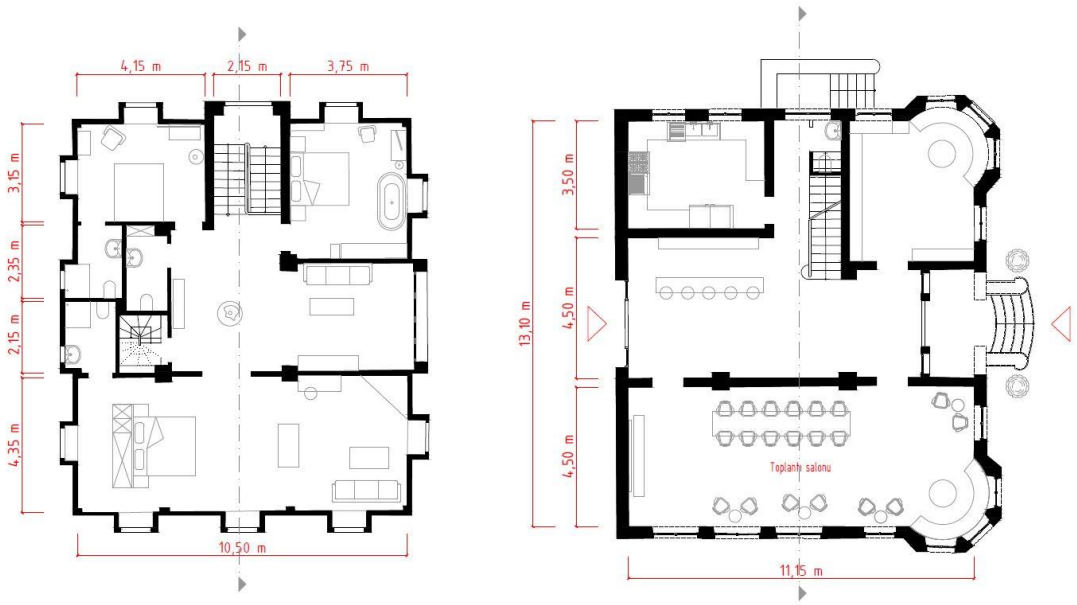


Figure 2.5: Plans (ground floor on the left and first floor on the right) of conservation of the Czech house by providing a function similar to the old function with a little intervention

Source: Beykoz Kundura, 2022

It is easier and more convenient to reuse the buildings with a function that needs functionally similar spatial programs and spatial scenarios than to use them with a different function. The old units of the buildings, which were used with a similar function to the old ones in Beykoz Leather and Shoe Factory, could be reused for the new function without the need for any intervention or with simple renovations.

2.3.3. Conservation Providing Museum Function

The buildings which have been re-functionalized from factory to museum ensure both the preservation of industrial heritage and the revival of history. The transformation of an industrial building into a museum not only provides the sustainability of architecture but also brings historical sustainability with it.

An industrial museum is expected to answer the question “What changes have occurred in the economic, social, urban, and ecological areas in and around the industrial facility with industrialization” (Engelskirchen, 1998). For this reason, the industrial museum must provide information such as the economic and technical development of the period in which the building was built, the daily lives of the workers, the way the products are used in daily life, as well as social and cultural

information (Föhl, 1994). In the use of industrial areas as museums, it is important to convey information about the unique environment of the industrial building such as sound, noise, and smell. Often large machines such as steam engines are exhibited in museum galleries as monument-like objects (Blockley, 1999). Industrial archaeology machines provide essential data for understanding the industrial process. It is not possible to protect industrial areas, which have completely lost their equipment and traces of old functions, by turning them into museums. It would be misleading to create museums where machines brought from different places are exhibited as if they were there before. The best solution would be turning the equipment, even while working, of industrial buildings into a museum to enable visitors to observe the function of this equipment and learn by experiencing their development in history.

An on-site examination of the Beykoz Leather and Shoe Factory helped determine whether the conservation method of conservation providing a museum function was preferred. There are many buildings and areas protected by this method in the industrial area. The entire old carpentry area of the Factory and the foyer areas are currently used as Kundura Sahne (Stage) and Kundura Sinema (Cinema). As part of the re-functioning of Beykoz Shoe and Leather Factory, the industry museum in the carpentry structure explains both the industrial culture of the factory, which had continued for nearly two centuries and the social life shaped around it (Figure 2.6). The energy system in the boiler room of the old factory is exhibited as an industrial heritage in the middle of the carefully designed Kundura Sahne. A part of the boiler room of the old factory is exhibited to visitors in the foyer of Kundura Sinema.

Figure 2.6: Conservation of carpentry structure by providing museum function

Industrial heritage buildings and equipment in the area are preserved as industrial archaeology. In the industry museum created this way, information and narratives are presented on many subjects such as production techniques, objects produced, the history and evolution of production, its place in the history of technology, the work of workers, and ordinary working days. In this sense, in the created museum, pictures, documents, and examples of leather in the production phase are exhibited, together with the background of leatherwork, the production stages, and the evolution of leatherwork in the factory together with the buildings over time. Shoe samples, which are the products of the factory from the early 19th century onwards, are exhibited in the factory's museum today. With the help of these examples, it is possible to evaluate the development of shoe tradition and art in terms of technique and design. The archive section in the carpentry not only exhibits preserved machines but also records the oral history studies carried out with the former employees of the factory and their relatives after 2015.

The re-functioning of this area, which is very important for the people of Beykoz, to bring it into social life, and the use of a few of the buildings in this area as museums,

have enabled them to be used by different cultures, genders, and age groups, and by this way, many more people can benefit.

2.3.4. Reuse With a Different Function

The deprivation of regular maintenance and repair of a non-functioning and abandoned building causes faster destruction of its structure. Time, natural conditions, and many other factors accelerate the deterioration of structures. In these circumstances, reusing the structures with a different function for conservation can be a good solution. The main purpose of reuse is to extend the lifetime of the building by making it alive again. In this case, the historical value of the building and its environment is protected by a change in function. Instead of demolishing structures that have lost their function, reusing them with necessary interventions is a method that has been used for centuries. Evaluating old materials and equipment are important factors in ensuring the continuity of history and monuments (Schweger, 1985). Article 10 of the Venice Charter (ICOMOS, 1964) states: "Where traditional techniques prove inadequate, the consolidation of a monument can be achieved by the use of any modern technique for conservation and construction, the efficacy of which has been shown by scientific data and proved by experience". It is still being determined whether smart materials with special dynamic properties can be used to reuse historic buildings (Topal and Arpacıoğlu, 2020).

Re-functioning industrial monuments often offer different options than other building types. Industrial buildings are generally quite simple in terms of structure; therefore, they can accommodate a wide range of options in the selection of new functions (Köksal, 2000). However, while re-functioning the building, the features that make it unique should not be spoiled. It is necessary to preserve the carrier systems, window proportions and profiles, interior openings, wall texture, courtyards, rails that provide transportation within the facility, and other similar features of such buildings. Achieving these depends on finding the appropriate function and performing the application correctly.

While determining the new functions, the historical and industrial archaeology values of the factories should not be ignored, the new functions should not lose the traces of the old functions integrated with the buildings and the area. The preservation of traces, equipment, data, and details of the identity, and original functions of the buildings

ensures the monumentalization of the old functions by emphasizing their historical background and industrial culture. The selection of the new function and the nature of the implementation are directly related to each other. Therefore, the main decisions must be made correctly first. For reuse efforts, it is common that public cultural and artistic use is preferred over individual use (Zöpel, 1985). It is aimed at wide participation that is not isolated from the land, that contributes to cultural development by considering the local users, and that prevents destruction and unconsciousness. Thus, while industrial monuments come back to life, they also contribute to the urban culture.

An on-site examination of the Beykoz Leather and Shoe Factory helped determine whether the conservation method of reuse with a different function was preferred. There are many buildings and areas protected by this method in the industrial area. Kundura Sinema, which was created as a part of the boiler room restoration project in 2019 (Figure 2.7) is the most intensive example of this method of restoration (Figure 2.8). The building, which was used as an oil rendering plant during the active years of the factory, functions as a cafe, seminar room, and activity area today. Also, many buildings in the industrial area have been preserved and transformed into a form that serves as a decorative series-film stage where many projects can be created using the green box and technological fiber infrastructure. The new shoe factory building is used for cinema and music events as well as the shooting of TV series and movies. The forge structure, which is the old iron workshop of the factory, is used as a restaurant open to the use of guests participating in the events organized within Beykoz Kundura, remaining faithful to its historical features and structure. The additional structure of the carpenter’s workshop is used as a children's workshop area. Some of the rows of buildings called Leather Wells are used as restaurant kitchens, offices, and temporary accommodation areas. The cafeteria structure at the factory entrance is now used as a technology office and training area. The union building is used as a cafe.

Figure 2.7: Reuse of the boiler room with a different function

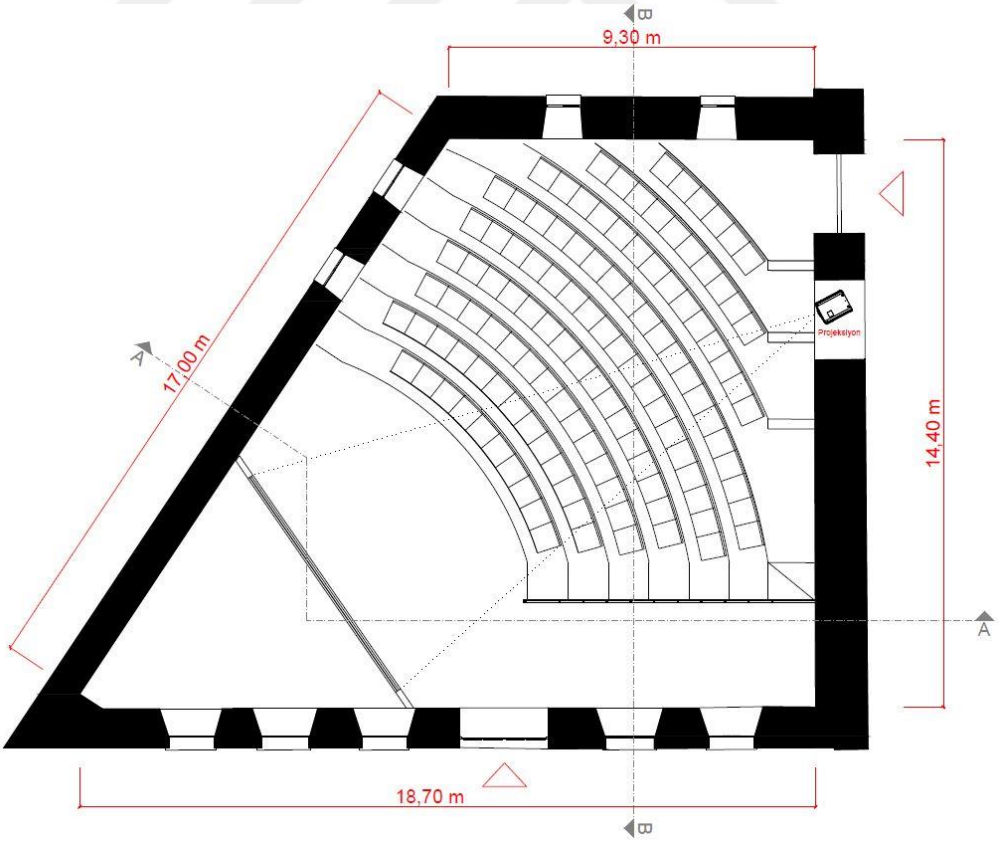


Figure 2.8: Plan of reuse of the boiler room with a different function

Source: Beykoz Kundura, 2022

Conservation proposals put forward are in line with the continuation of some structures in the area with a different function. The multifunctional use of the area has allowed it to be a visible space for the city and its inhabitants by serving more types of users.

2.4. Conclusion and Suggestions

Conservation of industrial archaeology is important both in terms of architectural memory and social memory. Numerous elements, such as facade, materials and construction techniques, equipment, furnishing, decoration, and plan scheme of the buildings, are information sources that illuminate the advancements of human history. Conservation is an important architectural approach in terms of both maintaining original structural values and ensuring the transfer of industrial heritage to future generations. Additionally, conservation is a sustainable approach. In contrast to conservation, the demolition of a building and the construction of a new one from scratch causes great harm to the environment, both in terms of waste generation and use of materials. Therefore, preserving and keeping alive industrial archaeology has several positive outcomes.

Preserving only a single structure or detail makes it difficult to understand industrial archaeology's dimensions and content. Therefore, for the conservation of industrial areas, it is important to properly determine and evaluate all parts of the area that convey information about the production style of a period and its surroundings.

The functional suggestions put forth after the Beykoz Shoe and Leather Factory lost its function and was privatized were aimed at preserving the area in a multifunctional structure. Since industrial archaeology is subject to unearned income in terms of large areas, building stock, and location, the factory is reused with multiple functions, which allows it to be a space for the city and its people, serving various users. Moreover, it has continued to preserve its feature of being an element that will increase the economic return, which is one of the main conditions for the protection and survival of the area.

The conservation and reuse of this facility, which has historical and cultural value for the people of Beykoz district and İstanbul, is valuable in many respects. By conservation and re-functioning, the buildings in this area are equipped with cultural functions, such as a museum, open-air concert and cinema area, indoor movie theatre,

and a film plateau that hosts movies, TV series, and video clips. This allows the area to be used by different cultures, gender, and age groups, allowing more people to benefit from the area.

After the closing process of the factory started with the decision of the Council of Ministers, the factory area turned into one of Turkey's most important TV series and movie plateaus. The area, which has been protected as a monument by registering its buildings, has become an industry for a period and an institution that shapes the cultural and artistic life of the time. It should not be forgotten that the transformation of the factory is for the public good. Even though the buildings in the area are transformed, their original names turn them into places of memory. The original venue names of the factory, such as Tire Operation Revision Buildings, Oil Rendering Plant, and Leather Cabinets, are still used in the field. In addition, the Carpentry Area, where the exhibition takes place, is still a place with its original name, where we can see the machines still used in the period and the wooden shoe molds that were produced. Machines are indispensable elements of the industrial heritage as they reflect both the stages of shoe production and the technology of the period in which they were produced.

The principles applied in the Beykoz Leather and Shoe Factory transformation project were determined according to the size of the area, its location in the city, and the decisions of the authorities. The main strategies for the transformation project can be listed as follows:

• To ensure the integration of the area with the city.

• To transform the area by assigning needed and appropriate functions, considering the physical and social structure of the city, in a dynamic context.

• To ensure that the area contributes to the city economically, socially, and culturally with the conservation and reuse programs to be implemented.

All the research, analysis, and on-site determinations reveal that each of the four conservation methods determined by Höhmann (1992) is preferred separately for the conservation of industrial archaeology in Beykoz Leather and Shoe Factory (Figure 2.9).

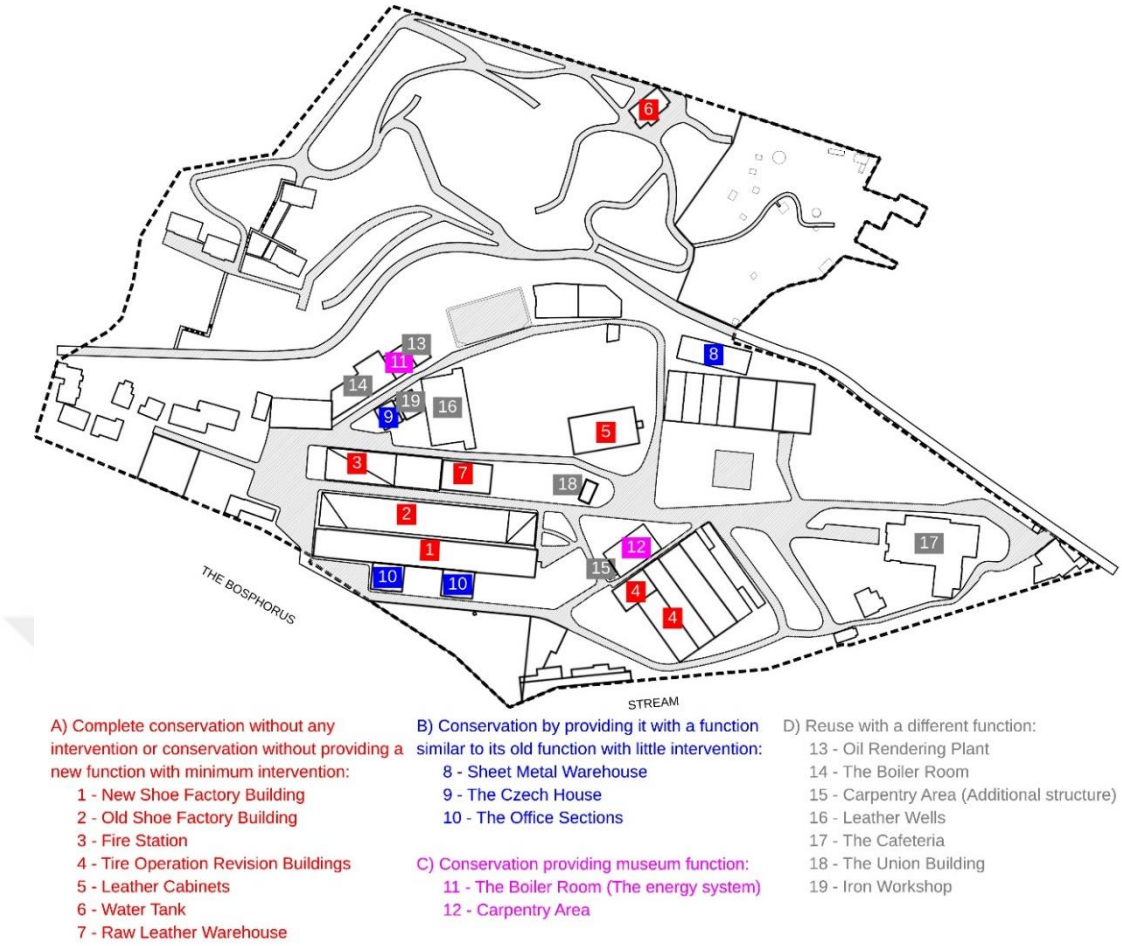


Figure 2.9: Map of conservation methods of buildings in Beykoz Leather and Shoe Factory

The structures that have survived from the past to the present in all industrial heritage areas indicated on the map have been preserved in line with different requirements with the four different protection methods described above (Figure 2.9). At this point, the ones that are prioritized in the decisions given for Beykoz Kundura; It is the implementation and sustainability of approaches such as exhibiting the industrial heritage, carrying out studies that will increase the knowledge and awareness of the public, taking information and examples from international practices and institutions. This situation has been possible with different protection methods being proposed, without forgetting that the main purpose is to keep the urban identity and memory alive while remaining within the concept of protection.

After the production of Sümerbank Beykoz Leather and Shoe Factory ceased, a new and different life was created within the remaining industrial heritage. To achieve this, different methods were used together, namely: complete conservation without any

intervention or conservation without providing a new function with minimum intervention, conservation by providing it with a function similar to its old function with a little intervention, conservation providing museum function, and reuse with a different function. With its conservation and re-functioning methods, the entire factory area can be considered an example of a planned transformation as an industrial heritage and open-air museum.

CHAPTER 3

FROM POWER PLANT TO ENERGY MUSEUM: SPATIAL PERCEPTION OF SANTRALISTANBUL[2]

3.1. Introduction

The industrial revolution first began in Great Britain, spreading to Europe and across the world. With the industrial revolution, the industrialisation process began, and industrial facilities were developed in numerous nations. From the late 18th century onwards, the reduction in the fabrication sector and the growth in the service and different economies resulted in the redundancy of countless industrial structures and areas (James, 2006). With the change in technology and the disappearance of some industry branches, these installations lost their functions and remained inactive. The locations of industrial installations became deposit sites in cities. For these historic industrial buildings and sites, much of their value lies in the evidence of change and development in societies they display (Foster, 1995). Today, architecture itself has become more concerned than ever with the memory of space and the inscription of temporal dimensions in spatial structures (Lorenz and Huyssen, 1996). Building conservation is a means of preserving our physical cultural heritage for future generations, its historic, aesthetic, scientific and social value (Foster, 1995).

The lifestyle of the past, the sense of aesthetics, constructive art, and the traces of customs and traditions are handed down to the next generations through historic buildings. In this sense, protecting landmark buildings, which are the witnesses of the past, means protecting the link between the past and the future of society and handing down the material and nonmaterial values of the natural and cultural environment to the future by claiming them (Feilden, 2003). The reasons for the preservation of cultural values are aesthetic - artistic value, tourism income, being a social product,

[2] This chapter is based on the paper: Kurnaz, A. and Aniktar, S. (2023). From power plant to energy museum: Spatial perception of Santralistanbul. Digital International Journal of Architecture Art Heritage, 2(2), 43-67.

and ensuring that the heritage from previous generations is passed on to future generations (Kesavaperumal et al., 2020).

In general, the best way to preserve historic buildings and sites is to keep them in active use. For the vast majority, this should mean economically viable benefits for their survival. Therefore, the scope and acceptability of possible services should often be an important consideration regarding the future of buildings in protected areas (Circular 8/87, 1994). Abandoned industrial zones contain a contemporary figurative and social essence. Often there stays a social bond, mutual liking, and honor communicated by the people, sustained even after abandonment (Cenci, 2018).

Priority has been given to upgrading these disused industrial buildings and areas to revitalize them with new roles and architectural shapes (Cenci, 2018). The significance of industrial spaces in providing social infrastructure at the urban scale is undeniable. Due to the conditions of the time, various social areas may be needed to meet user needs. In this sense, it is thought that the use of structures with historically different functions positively affects the social infrastructure (Ismailoglu and Sipahi, 2021).

In this study, the spatial effect of gathering old industrial technologies and new technologies together in the utilisation transformations of industrial areas was examined. Historic industrial buildings, which reflect the old industry and technology and have lost their purposes, receive new functions through the change in their utilisation, allowing them to maintain their existence. This transformation means that old technology meets new technology; the old meets the new; and the past meets the future.

The study aimed to pave the way for the old–new concept provided to the visitors by approaching the industrial buildings that have become symbols of industrialisation and contemporary architecture within the context of handing down the historical identity phenomenon to the future in terms of space perception. The buildings transformed from industrial buildings primarily function as museums. However, only a few of them were transformed into energy museums. This study thus aimed to evaluate the energy museums transformed from industrial buildings. The scope of the study is restricted to the buildings that once functioned as energy generators and then became energy museums after being re-functioned in Turkey. Therefore, primarily the energy museums in Turkey were detected. The example chosen is that the sole structure,

Santralistanbul, which was once used as a power generation factory is now being used as an energy museum.

The study examines the historical industrial architecture phenomenon used by adaptive reuse. In this context, the research's main problem was how the industrial building's potential could be used more effectively and sustainably by preserving and refunctioning the historical and cultural structure. So research hypothesis is that architectural values could be preserved and transferred to future generations.

3.2. Literature Review

3.2.1. Conservation and Adaptive Reuse

De-industrialisation is a phenomenon that has affected many regions in complex ways during the 20th century (Auclair and Fairclough, 2015). Industrial buildings and areas are traces of history, and each trace is important. It is undesirable to abandon historical rural buildings, as they determine the characteristic identity of the settlements they are located in and at the same time are concrete documents of the social life and cultures of the past periods (Akturk and Ediz, 2020). The Nizhny Tagil Charter defines industrial heritage as consisting of the remains of industrial culture which are of historical, technological, social, architectural, or scientific value (TICCIH, 2003). Farmhouses, factories, stations, workshops, and mining sites are some of the heritage sites that can be studied under the heading of industrial heritage (James, 2006).

Their conservation has in many cases been instigated since the inauguration of The International Committee for the Conservation of Industrial Heritage (TICCIH) in the United Kingdom in 1979. The dereliction of industrial buildings due to the emergence of new technologies raises the issue of future uses for them (Vehbi et al., 2019). Industrial buildings and areas, which are important indicators of a country’s social and cultural past, lose their functions primarily due to rapid technological advancements. When the protection of industrial heritage buildings and economic approaches are combined, we encounter the concept of re-functioning (Edwards and Llurdes i Coit, 2017). By this means, it is desired to draw attention to the decrease in energy raw materials, which is the most crucial problem in the world, and to raise awareness. By this means, it is desired to draw attention to the decrease in energy raw materials, which is the most crucial problem in the world, and to raise awareness.

For many industrial buildings, their original functions may have ceased altogether, thus requiring conversion to avoid the problems of disuse, destruction, and decay (Foster, 1995). This necessity gains importance in reducing the damage to the natural environment by making good use of the existing building stock and maintaining cultural and historical continuity (Aydin and Yaldiz, 2010).

The TICCIH states the aim of adaptive reuse of industrial heritage as the protection of buildings from becoming old and unusable and preventing their possible collapse. Industrial heritage has a social value that provides an important sense of identity, scientific and technological value in the history of construction, manufacturing, and engineering and has a considerable aesthetic value for the quality of its design, architecture, and planning (TICCIH, 2003). The opinion of taking over these buildings and turning them into signs of renewal has become an appealing choice for both stakeholders and society. Historical industrial buildings are tangible elements that transfer the economic and technological conditions, cultures, and social lives of the societies they belong to the next generations, as well as being a source for the history of architecture. Due to the developing technologies and changing social needs over time, structures also have to change (Maxwell 1997). Adaptive reuse has been successfully applied in many types of facilities. It is possible to see examples of culturally significant industrial buildings' adaptive reuse. These culturally important structures characterize other looks of cities as living observers of the production culture in those cities (Babutsali Alpler et al., 2020).

An industrial structure or area may represent the splendor of one or more past and the social or financial assistance that the land and its residents have made regarding heritage and communal identity. This historical significance should be seen as an asset, a support instrument for evolution, not as a limitation that needs protection and redevelopment. Therefore, once an area has been specified, it is essential to find a place in a regional dynamic and remain involved as long as the community exists. To achieve this, the area needs to have a symbolic identity, and as a result, the desire to invest in the building is inspired by a program in line with the needs and expectations of the community. Historical understanding of the area and symbolic ownership of the site is essential for a sustainable, material change (Cenci, 2018).

As an option for pure conservation, preserving abandoned industrial areas for use as museums can be economically and socially possible. Yet this choice is suitable

especially for old industrial structures. For instance, disused factories, mine structures, and mills are ideal living models of old-fashioned work practices, if not extinct. The abandonment of historical industrial buildings, which have important values for the society, and their idle state, eliminates the local people's sense of belonging and experience over time (Ahunbay, 2010).

3.2.2. From Industrial Settlement To Energy Museum

Throughout its growth, architectural elements in the industry were characterized by technological and financial consequences. The industrial revolution led to technical inventions connected to the raised production capability of the industry (Cenci, 2018). When industrial buildings are physically examined, they have a structural installation, spatial order, and interior atmosphere that distinguish them from other buildings. The main reasons for this differentiation are the technology of that period and the function that shaped the building. The appearances of industrial structures differ mainly from famous typologies of ancient heritage (Giuliani et al., 2018). Overall, they are unique, both in height and shape (Babutsali Alpler et al., 2020). At the beginning of the 20th century, inventions related to the improved consumption of electricity, oil, and chemistry were additionally in the industry. Factories have become marks of industrial architecture (Cenci, 2018).

Their wide-open spaces and volumes are significant parts of industrial structures such as power plants (James, 2006). The symbols of the power station industry are big machines and vast crane bridges. Many of these structures have escaped demolition as survivors of the battle and have experienced technical transformation, urban regeneration, or changes in international finances (Crisman, 2007).

In the beginning, the perception of the industry was optimistic. It imaged improvement and modernity, despite plant employees' dirty and tiring work (Cenci, 2018). However, by the mid-20th century, industrial buildings were seen as a symbol of poor working conditions and slow technology (Neaverson and Palmer, 2012). Today, the general thought has grown to the point that industry should not leave its preservation work because the abandoned industrial structures significantly contribute to urban renewal and the visual quality of a city (Babutsali Alpler et al., 2020).

To a different degree, contemporary cities are filled with a messy and harmful industrial area that stems from previous manufacturing movements. The remnants of

industrial manufacturing have often been converted into contemporary museums, artistic platforms, educational buildings, and offices through different cleaning and transformation processes and reconstruction (Crisman, 2007).

Museums are significant among these because they constantly hold new exhibitions and have visitors (Stratton, 2000). The use of industrial heritage areas, which have lost their functions as museums, aims to constitute historical consciousness and the past to contribute to the future by claiming society's shared values. By the ICOM Statutes, adopted by the 22nd General Assembly in 2007, the current museum definition: A museum is a non-profit, endless organization for the benefit of humanity and its evolution, available for people, which develops, preserves, studies, and displays the heritage of society and its atmosphere for the objectives of education and research (ICOM, 2022).

Industrial areas' adaptive reuse for exhibiting modern art grew in the 1960s and continues to grow (Crisman, 2007). Andreas Huyssen may have attributed the wish to maintain left industrial areas as part of the memorial culture and the present desire with the past, which he explains is a response to the accelerated momentum of modernization, as an attempt to claim a sense of time and memory (Lorenz and Huyssen, 1996).

During the last decade, countless empty industrial buildings in the world have been turned into cultural spaces, both formally and functionally. They often offer excellent places in the metropolitan center and appropriate physical requirements for museum function, including big and unrestrained areas for flexible hall space and public assemblage, a ton of natural light and high tops for showing extensive painting, and structurally stable constructions that may be recycled better economically than new building (Crisman, 2007).

It is essential to respect that the method of making a tabula rasa from a retired industrial area converts it into natural heritage while changing the harmful notion of an industrial area into a tangible part of heritage (Cenci, 2018).

The industrial areas that have lost their functions are re-functioned with many different functions. Some of these areas maintain their function as museums. Only a few of these industrial buildings, which functioned with contemporary art, selected the energy topic as a major theme. The transformation of these areas into museums dedicated to the

things they once produced is fundamental in terms of witnessing the traces of the past. The energy installations, which have a unique industrial heritage quality and accept visitors as if they were in a museum, constitute a basis for comparing the past, the present, and the future.

Energy museums are places where individuals of all ages participate in educational activities, which can be considered a purpose for energy museums. In today's world, where discussions on energy continue, pollution increases rapidly due to technology, and world politics is focused on energy raw materials, the topic of energy has gained universal importance. The objective of energy museums is to highlight the significance of energy through industrial production materials and reflect the impact of energy on the development and transformation of civilisation through interactive areas.

3.3. Methods

This work concentrated on examining the transformation of Silahtaraga Power Plant area, investigating the qualities of the energy museum buildings in the area, and evaluating them in the context of industrial archaeology. The examination has three significant components: literature study, fieldwork, and data analysis.

Literature study: In the literature, it is seen that there are very rare scientific studies on the refunctioning of the industrial power plant heritage to Energy Museum in the historical. There is no study that examines Santralistanbul in the Golden Horn district for sustainable tourism from the perspective of spatial perception. The literature study was performed similar to the area survey. The main concepts and sub-concepts that constitute the subject of this study were discussed. Within the scope of this study, internationally valid legislation and regulations on restoration and preservation were also examined. Within the scope of international conventions on historical sites, legal regulations such as the Venice Charter (ICOMOS, 1964), Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO, 1972), The Declaration of Amsterdam (ICOMOS, 1975), Convention for the Safeguarding of the Intangible Cultural Heritage (UNESCO, 2003), Charter for The Conservation of Historic Towns and Urban Areas (Washington Charter) (ICOMOS, 1987), International Cultural Tourism Charter (ICOMOS, 1999b), Vienna Memorandum (UNESCO, 2005), The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas (ICOMOS, 2011) cover important criteria for

reuse and have been examined in detail in order to create the legal framework of the study.

Fieldwork: Two architects specialising in architectural design and conservation carried out this in a 3-year period between 2019 and 2022 with some site visits. It was performed in the following phases: recording observations, including photos, and notes on areas.

Data analysis: Data gathered from the fieldwork were studied regarding architectural components (including location, setting, design, architectural parts, structural strategy, and building methods), machinery, structure changes, material pollution, and structural damage.

Data were collected through on-site observation, analysis of relevant documentation during multiple site visits. One of the original aspects of the study is to conduct and comprehensively evaluate all three of the literature study, fieldwork, and data analysis within the scope of the study.

3.4. Analysis of The Case Study: The Transformation of Silahtaraga Power Plant

Case Selection

Within the scope of the study, Santralistanbul, which was transformed into a museum in Istanbul, was selected as the study's sample due to its place, role, and historical quality in the historical process in terms of industry and trade. The first function of this building was to generate energy. After losing its function, it was transformed into an energy museum. Silahtaraga Power Plant is an emblematic building of a historical period characterised by technological progress and economic and political conditions. The historical background, the re-functioning process, and the situation today of Santralistanbul chosen from Istanbul were evaluated, and the interventions to the building were determined.

Silahtaraga Power Plant

The Silahtaraga Power Station was established in 1913 to provide electricity for lighting the streets and the palace, the consumption of residences and industry, and the tramway plant. The factory, which was the first thermal power station in Istanbul and Turkey, provided electricity for Istanbul on its own. With the decision dated 1983, the

production had to be stopped because the technical system of the station had become old; raw material could not be provided; the stream from which cooling water was provided was polluted; technical equipment such as machines and appliances could not meet the requirements of the period; the production was not economic anymore; and the station was causing pollution around the Golden Horn (Neziroglu and Yilmaz, 2013). Since they witnessed the history of the city and had an essential architectural identity, they were recognised as industrial and cultural heritage and put under protection according to the decision of the Ministry of Culture's Cultural and Natural Heritage Preservation Board.

The engine rooms numbered 1 and 2, considered to have been built in 1913 and 1921, were transformed into an energy museum (Figure 3.1). The machines and equipment were preserved. The turbines in this building were preserved, and they were being used to exhibit the power-generation process. The museum exhibits the turbine generators with AEG, Brown Boveri, Siemens, and Thomson Houston brandings, which were the most essential elements of production in the Silahtaraga Power Station and reflect the typical characteristics of the advanced technology of that period to the visitors. The escalators, podiums, and steps that were added later to the building offer an opportunity to watch these turbines from different angles. The Santralistanbul Museum of Energy, a field containing 22 interactive units and bringing entertainment and science together, was established to allow visitors to generate their own power, touch thousands of volts of electricity without any hesitation, and perform many more experiments; the Control Room, where the power generation and distribution to diverse neighbourhoods of Istanbul were controlled, is preserved with its detailed command devices and appliances. The energy museum exploits the drama of the internal spaces and skilfully contrasts old and new elements.

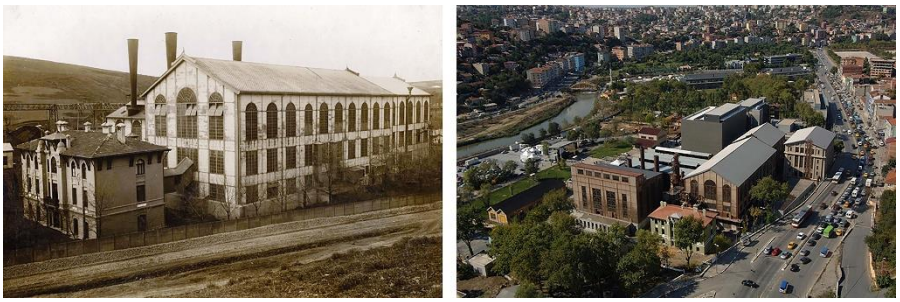


Figure 3.1: From power plant (left) to energy museum (right)

Source: Santralistanbul, 2022

3.5. DATA COLLECTION

Santralistanbul presents three principals to lead other transformation projects in terms of designing a method:

– Utilizing history as a lever by combining an industrial culture with the protection and usage of the industrial site as a symbol,

– Reversing a place's harmful notion and famous thought by making cultural affairs in its old place,

– Creating a modern image in the sight of heavy pollution.

While re-functioning was performed on the structures, which are, in fact, the factory's machines, it was attempted not to impair the existing integrity and aesthetic of the building with the concern of touching the building as little as possible. It was also aimed at creating flexible and transformable places. Structural elements inside the buildings from the factory period, machines, machine bases, and all the parts have survived.

In the museum, the chaotic situation caused by the original functions of equipment was fixed, and it was transformed into a science and entertainment area where several experiments are performed. The museum offers visitors the ability to attend educational programs with the themes of electricity and energy. The visitors were informed during these programs about the history of the Silahtaraga Power Station, the sources of energy

down the ages, energy-saving, and the methods of obtaining electricity. It offers the ability to practice with electricity-themed game units in the Energy Play Zone, attracting the attention of all age groups. These programs are significant for the promotion of the unique identity of the factory.

This resulted in a consistent series of transformations that radically altered the appearance of a prominent one-time industrial site. Their rough and unfinished condition evokes history. The tension between the two languages creates a material connection and solid aesthetic knowledge. Santralistanbul guests are instantly encountered with the material facts of the last industrial processes, where their textures and artifacts are not upgraded or maintained for the sake of memories but are preserved

for educational objectives and exist amid the daily life of the areas, strange reminders of the activities and culture that once dominated the power plant complex and the entire Golden Horn region. However, the museum differs from the others in its architectural techniques, displaying other perspectives on industrial dirt and leftover materials.

The selected case is a significant example of industrial areas with metaphoric significance, reminiscent of several industrial zones. Factors determining the spatial sense in the study will be examined under 10 sub-topics through the example of Santralistanbul. These factors are the user's visual perception, lighting, material, circulation, security, floor, ceiling, accessibility, technological use, and guidance.

Visual details:

Every detail of the business; movable/immovable production machines that have remained original and retained their original function; overhead crane mechanisms; warning boards; and even tool sets are exhibited in the re-functioned museum (Figure 3.2 and 3.3). Particularly in areas where the unique identity was displayed by conserving the production equipment, the noise, every technical element, and the natural surroundings, it has become a location that provides tourists with knowledge about the history of that time, such as workers' daily lives. The minimally revitalized interior, with its vast machinery, oxidized steel frame, and diverse pipes, raises the viewer's understanding of contrasts in technology and culture.

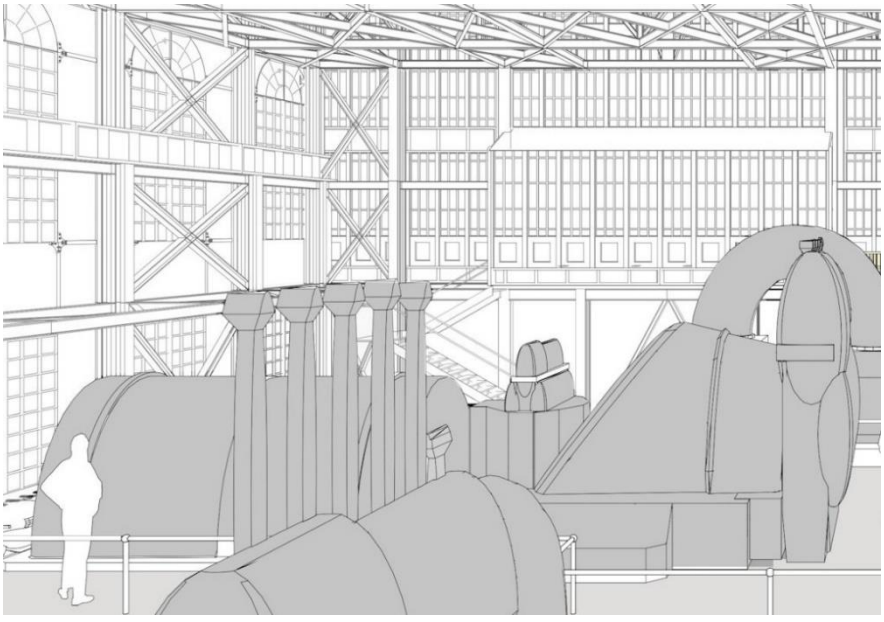


Figure 3.2: Old production machines

Source: Arkiv, 2022

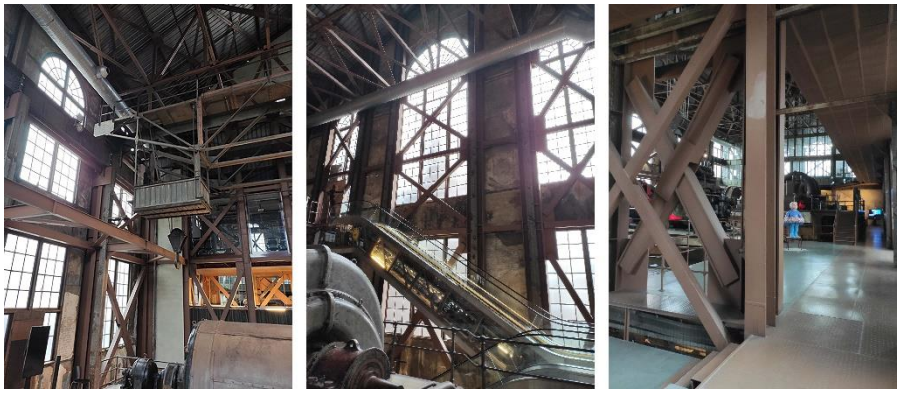


Figure 3.3: Visual (left), lighting (centre) and material (right) details

Lighting details:

This structure receives excessive sunlight through the large windows, except on the ground floor (Figure 3.3). The ground floor is lit with artificial lights. A different atmosphere showed up with the use of blue and red artificial lighting. The coloured and hidden lights influence the glory of the objects. Colour-changing lights were placed between the machines, and at the entrance, attractive hidden lights were used under the metal grate.

Material details:

The steel fortifications made with contemporary materials were painted a different shade of brown, revealing the distinction between the old and the new (Figure 3.3). On the floors of the corridors leading to the control room, less-processed wood was preferred, and for the balusters, glass was used. Furthermore, it was revealed that these were added later. The blank spots on the panels were shown by using transparent plexy material.

Circulation details:

There are escalators whose mechanisms can be clearly seen when entering the place where coal bands slide horizontally.

Another critical circulation intervention in the place is the sightseeing pier, hanging 12 meters off the ground to allow visitors to perceive turbine-generator groups comfortably and to wander (Figure 3.4). The sightseeing pier was designed to let

visitors see the machines easily, and it was newly constructed on a steel structure with a wooden floor and glass balusters (Figure 3.5).

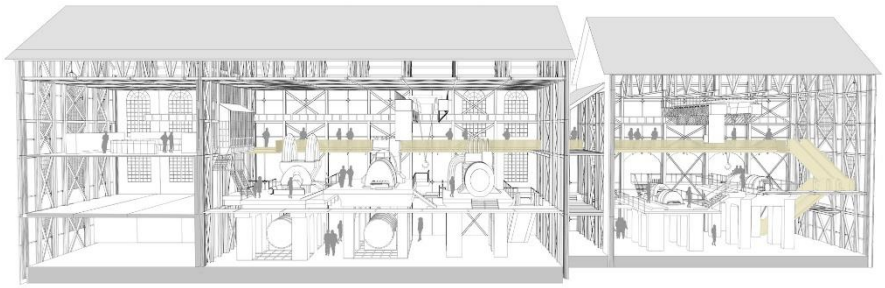


Figure 3.4: The sightseeing pier

Source: Arkiv, 2022

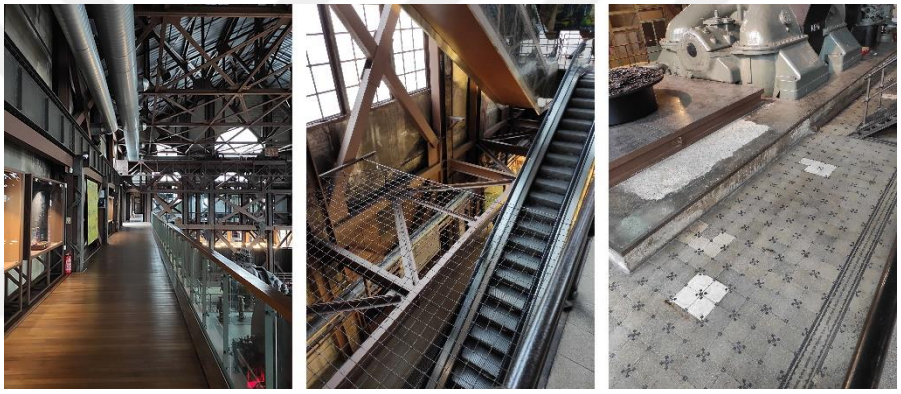


Figure 3.5: Circulation (left), security (centre) and floor (right) details

Security details:

During the re-functioning, the steel carcass external skin of existing structures and the scissor system roof were fortified with thin steel according to the earthquake code. The steel fortifications on the top and the walls affected the volumetric perception of the place, and the excessive steel intervention on the roof caused the volume of the building to become narrow perceptively.

In addition, balusters were built on every circulation area, and to prevent objects from falling, a safety net system was constructed (Figure 3.5).

Floor details:

To close the level gaps on the floor; concrete, metal grate, wooden-steel stairs, and wooden platforms were used partly. The ramps and stairs were renewed very similarly to the originals. It is seen that there are four types of tiling intervention. The interventions to the tiling were as follows: preserving it as it is, renewing it with a material similar to the existing material, adding tiling that did not exist before at some parts, and obliterating the existing tiling (Figure 3.5). The ceramic diamond tiling around the exhibited production structure was preserved, and by not completing the missing parts, it was referenced to the past of the building. The metal parts of the tiling, which were in the exact location on the floor before the transformation but damaged in time, were renewed using a different colour.

Ceiling details:

Installation pipes and electric cables were not hidden and were left exposed with a naked structure (Figure 3.6). Through the air ducts, air circulation to the place is provided by flanged blow mouths. Industrial elements such as lights left exposed and air ducts contributed to the unique identity of the building.

Figure 3.6: Ceiling (left), accessibility (centre) and technological use (right) details

Accessibility details:

An elevator was added to the building, and wheelchairs were allowed to pass with the ramps (Figure 3.6). Another accessibility intervention in the place is the sightseeing pier, allowing disabled visitors to perceive turbine-generator groups comfortably and to wander (Figure 3.7). Disabled visitors can experience all buildings without any help, thanks to the elevator, inclined ramps, and sightseeing pier.

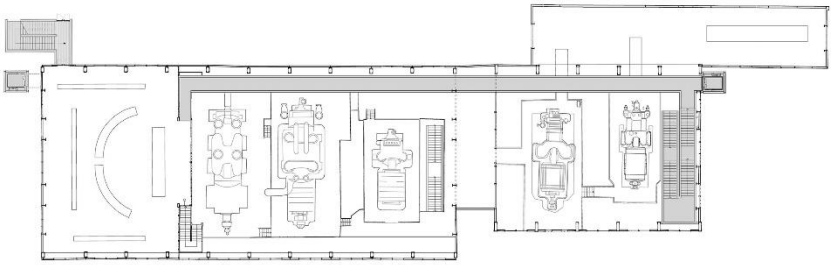


Figure 3.7: Accessibility parts on the second floor

Source: Arkiv, 2022

Technological use details:

The industrial background of the building and its situation today is shown on the digital displays placed on the wall at the entrance and on the floor. Also, the user-interacted digital displays in the control room and at the walking port give information about the building (Figure 3.6).

Guidance details:

There is some vagueness related to guidance. Due to the café and standard fields, that the visitors encounter as soon as they enter, it was observed that finding direction gets difficult.

3.6. Discussion And Conclusion

In this study, the criteria establishing the spatial perception of Santralistanbul were identified by evaluating the existing structures and historical data and assessed using a literature study. This literature study could have been better in establishing adaptive reuse priorities in the study area. Thus, the literature study was quantified using fieldwork and data analysis methods to be objective while making the spatial perception of Santralistanbul decisions. Therefore, the method used in this study is expected to provide guidance to future research and practice worldwide to detect spatial perception and planning decisions of adaptive reuse.

Adaptive reuse of historical industrial buildings' policies to be developed for the future of the settlement can only be successful if the internal and external factors affecting the settlement are taken into consideration. It is very important that this situation be taken into account in future reuse projects. It is impossible to evaluate Santralistanbul's

goals of preserving buildings and spatial perceptions of its cultural and industrial heritage for the future and reviving them independently of each other and from high-level design policies and decisions. Conservation and adaptive reuse policies should provide insights on how to build strengths, maximize opportunities, reduce threats, and eliminate weaknesses.

It is vital for people who use and visit the re-functioned building to see the traces of the past and be aware of its historical identity. However, it isn't very likely whether such sites have the potential to translate the benefit to society profitably. The answer is that some areas have a more excellent heritage significance than other areas. Still, many have a rich history that includes part of the originality of residents, cities, or provinces. Within the context of the relationship between place and time, the transformed buildings connect us to both the past and the future. The proposed new use at Santralistanbul reflects contemporary culture, valuing architectural heritage, and promotes a more robust environmental understanding.

When informing about the functioning of the factory and the technological situation of the period in terms of electricity, several recordings and information boards were used excessively. From the introduction of energy sources to the generation and productive use, all the links in the chain are presented to visitors. The power stations, which were transformed into energy museums, are buildings that still preserve their equipment and reflect the production techniques and processes. The goal of the energy museum is to reveal the historical layers of the building to visitors.

Within the scope of the Venice Charter, in the additions made during the re-functioning process, modern techniques were used, different colours were used, and the distinction between the old and the new was revealed. The industrial background, which can be clearly perceived at the front of the building, can also be perceived from the interior. Santralistanbul is a critical industrial and cultural heritage in Istanbul. These kinds of facilities are the memory of the cities. The restoration of this facility, sharing its story through writings and pictures, and planning the environment to make it suitable for cultural events are extremely valuable for Istanbul.

Factors determining the spatial sense in the study had examined under 10 sub-topics through the example of Santralistanbul. These factors are the user’s visual perception, lighting, material, circulation, security, floor, ceiling, accessibility, technological use,

and guidance. All these factors examined showed that during the conservation and adaptive reuse of historical industrial Santralistanbul buildings, it was aimed to clearly convey the distinction between the old and the new to the visitors, and design decisions were taken in that direction. The technical details of the changes made to the structure and how the least intervention to the structure was made can be seen in graphic explanations (Figure 3.2 and 3.4).

The interior setup of the industrial heritage buildings was planned to allow flexible uses instead of the strict uses in the factory period, to be entertaining, and to give room to users from every age group and every profile. The effects in structural and interior in terms of reuse were calculated by considering the interior and exterior characteristics of the industrial buildings chosen from Istanbul. It is believed that it will be helpful in the studies in this area with similar practices.

In addition, we hope that this examination will guide further study and analysis of similar subjects, particularly in Turkey, and help global study.

CHAPTER 4

VISUAL PERCEPTION AND CONTEXTUAL RELATIONSHIP OF CONTEMPORARY EXTENSIONS AND HISTORICAL BUILDINGS[3]

4.1. Introduction

Cities are the tangible products of historical continuity. The current architectural structures of cities have been shaped by formation, change, transformation, and continuities, as a reflection of the lifestyles, aesthetic understanding, and technological opportunities of cultures and different periods of history. Cities are in constant states of transformation. Those cities, or parts of cities, presently in transformation can be defined as "new" developments, while areas of those cities not undergoing any current transformation processes can be termed "old" developments. Cities should maintain continuity as well as respond to change to survive (Altınöz, 2010).

In this regard, idle historical structures are revitalised with contemporary extensions, thus strengthening their connection to the urban context. Extension decisions for historical buildings affect the building's form, indoor organisation, relationship with users, and the exterior's harmony with its environment. From a visual-aesthetic perspective, they also affect the urban skyline. When considered from this perspective, extension decisions for historical buildings must preserve history as well as adapt to contemporary requirements and conditions. When designing contemporary extensions, building form and context, design method, and the building envelope appearance are also architecturally important (Polatoğlu, 1994).

New development is an inevitable part of a city's evolution. Contemporary extensions are a preferred method of such development since this meets contemporary usage needs. The acceleration of the building protection movement, particularly in the 20th

[3] This chapter is based on the paper: Kurnaz, A. and Aniktar, S. (2024). Visual perception and contextual relationship of contemporary extensions and historical buildings. Journal of Architectural Conservation, 1-21. https://doi.org/10.1080/13556207.2024.2318923

century, has had a positive effect on contemporary extension work. Therefore, the concept of extensions to historical buildings has become an important subject of discussion, research, and implementation. The main problem for extension design in an historical environment is how to establish the relationship between the old building and the new one. This study aims to review the visual perception and contextual relationship of contemporary extensions to existing historical buildings in terms of design elements affecting visual perception (material, colour, fabric, form, mass, and rhythm) in 15 contemporary extension designs from different architects. The review was performed based on repetition, authenticity, harmony, and contrast, which count among extension design methods.

4.2. Literature Review

4.2.1. Context In Historical Buildings

Historical buildings are examples of architectural history that transfer the economic and technological status of the society to which they belong as well as the progress, development, social life, and experience level of their culture (Şahin, 2011). Buildings also change with developing technologies and shifting social requirements. Historical buildings unable to adapt to changing dynamics and conditions over time break away from the urban context, cannot survive economically, lose their functionality, and ultimately are abandoned (Altınoluk, 1998). Destruction of historical buildings that have importance or value to a society removes a sense of belonging and experience for city-dwellers. Within the scope of spatial memory indicators, a building's relationship with its surroundings and urban location is an important parameter in terms of memory value and continuity of use. When evaluating an historical building, context is important in this regard. Although these buildings become old and unused, they continue to exist physically because their structural lives have not ended (Cengizkan, 2006).

Renovating and using historical buildings support both cultural and economic sustainability. The interventions that ensure building survival from the present to the future form the new building setup and shape its usage and meaning (Kıray and Karaman, 2006). When historical buildings' spatial organisation and service infrastructure are inadequate during the adaption process to effectively integrate them into contemporary life, the concept of extension construction arises. Extensions added to the original building texture and designed with modern construction techniques and

materials to represent technological advancements and culture are defined as contemporary extensions. Throughout history, different types of buildings have been expanded with extensions constructed in line with their needs. According to its linguistic definition, an extension is a dependent form unit that changes the meaning or value of an object (Şahin, 2011).

The Venice Charter stipulates that, "Additions cannot be allowed except in so far as they do not detract from the interesting parts of the building, its traditional setting, the balance of its composition and its relation with its surroundings" (ICOMOS, 1964). Further, the Carta Del Restauro Charter stipulates if it is required to construct additions in order to strengthen a monument or fully or partially complement it, or for the purpose of reusing, the basic requirement is to minimise new elements and ensure that they are basic and reflect the structural organisation. A similar extension can be accepted only if it continues the existing lines of the building and there are geometrical expressions free from decoration (ICOMOS, 1931). When considered within the framework of contemporary preservation theories, extensions should be separated from the original identity of the building in terms of material and design language. Observers should be able to read that the additions reflect a different language (Ahunbay, 2019). The old-new relationship should be presented in an explanatory manner with different emphasis such as form, material, and colour. Contemporary extensions should be designed with an approach that complements the historical building visually and functionally and preserves and features its authentic parts (Kuban, 2000).

Architects design their buildings according to the context relation so that they can integrate with building surroundings and be a part of those surroundings. In some cases, they may turn towards a design concept in harmony with the building's surroundings and, in others, one that is contrary to its surroundings and different and independent in that context. In each case, first the context is analysed and then a decision is made as to what kind of design approach will be taken (Farrelly, 2011).

4.2.2. Design Methods and Elements

When deciding on the design of contemporary extensions to a historical building, it is essential to fully understand the historical building and context so that the new building will respect the past as well as reflect the characteristics of the current period.

Therefore, context is essential. The effects of the building facade and mass that represent the parts of the new building that will first establish a relationship with the surrounding should be considered, and these details should be evaluated in terms of the formation of the building envelope and the environmental approach (Bekdaş, 2016).

As one of the subclasses of the historical building preservation approach, contemporary extension applications have been addressed with a variety of methods within the historical process. In many studies on this subject, several common techniques stand out. When examining the methods of designing contemporary extensions to historical buildings, the following four design methods have been discussed: repetition, authenticity, harmony, and contrast.

Repetition is a method in which an historical building is used in an exaggerated manner and the past is precisely repeated. The approach is mainly based on fully using the historical building as a reference and planning the new design without breaking away from the building. Since this method does not reflect the new technology of the period when the contemporary extension is constructed, it is difficult to read the historical building and the relationship between the structures. Here, copying or constructing in manner so similar to the previous design prevents the new design from being distinguished from the old one; this obscures the relationship between the old building and the new. As a result of repetition, the contemporary extension becomes invisible (Bekdaş, 2016). This method aims to evaluate the spatial organisation, facade setup, carrier system, and material properties commonly used in the historical environment where the new building will be constructed and to exactly use these elements (Arslan et al., 2020). This approach contravenes the Venice and Cart Del Restauro Charters as they both stipulate that the addition, materials, sections, and parts must be legible and separable from the old building (ICOMOS, 1964; ICOMOS, 1931).

In the authenticity method, the era and attitude of the old building is clearly defined with a new interpretation, considering the historical building's properties to which the new structure will be added, and based on an approach aware of what should be emphasised or evaluated. Therefore, this method is neither a copy of the historical building nor an attitude that oppresses or rejects it, only emphasising its own existence. This intermediate approach focuses on a serious examination of the characteristics that distinguish the environment in which a new application will be deployed (Akın and

Batur, 2003). With the authentic design method, the extension to the historical building establishes a visual relationship with the historical building but avoids repeating it. The addition is designed in a manner that refers to the associated historical building using a design that is specific to that particular historical building (Arnheim, 2009). The addition also reflects the technology and design concept of its era.

Consistency is a method that ensures harmony between the historical building and its contemporary extensions. The envelope of the addition is completely accordant to the environment in which it is located. This concept is defined as bringing references from the historical texture to the present (Zeren, 2010). It is based on comprehensively analysing and interpreting common architectural elements and forms in the historical building but designing the contemporary extension with current materials and technology (Altınöz, 2010). In the consistency approach, designs are presented that show similarities between the addition and the historical building in terms of the facade and mass character, the repetition of a specific rhythm, the occupancy-void ratio, and dominant and distinctive formal properties. It should be noted that this approach avoids making the new extension a copy of the historical building. The difference between the original texture and the addition is tangible. When forming the building envelope, harmony can be obtained with arrangements that provide similarity in terms of design elements such as size, ratio, direction, colour, form, and texture (Aksoy, 2010). With the aim of integrating with the historical environment, the mass and facade ratios of the new building are similar with the historical building to which it is added. The architectural composition does not change (Aydın, 1998). The addition constructed with this method is built with principles that respect the historical building and present a modern formation, but do not forestall the historical building, and also maintain the style of its era (Arslan et al., 2020).

Contrast is a method used in the design of an extension to a historical building that establishes a contradistinctive relationship between the old and new building. The new structure dominates the old; it is set up independently from the inputs provided by the environment in which the architectural formation of its era will be made. There is the idea of creating contrast with texture behind this new structural design (Zeren, 2010). The fact that the interventions in the historical texture are contrary in terms of the relationship with the building means that the new extension is designed independently from the old building in terms of visual properties such as form, colour, material, ratio,

and scale; the extension emphasises itself and the historical building using a contrary image. The new extension designed with this approach features its own identity, unlike the existing building (Zeren, 2010). In the contrast approach, an intentional contrast is created with the architectural properties of the historical building such as facade organisation, mass properties, and material composition, among others. Designs constructed completely independently from the historical building are included in this approach and are set up based on the concept of contrast (Al-Jameel and Saffo, 2011).

This approach parallels the Venice and Cart Del Restauro Charters as they both stipulate that the addition, materials, sections, and parts must be legible and separable from the old building (ICOMOS, 1964; ICOMOS, 1931). In the contrast approach, an intentional contrast is created with the architectural properties of the historical building, such as facade organisation, mass properties, and material composition, among others. Designs constructed entirely independently from the historical building are included in this approach and are set up based on the concept of contrast. For example, at the end of the 20th century, the famous architect I.M. Pei made an extension by contrasting to the Louvre, bringing the historic building to life again with a modern and innovative approach. Although this extension of Pei was criticised by many architectural and conservation authorities when it was built, it is now obvious in the literature and its contributions to tourism how successful this extension is in contrast with the historical building.

Understanding the historical environment and the historical building with regard to the design of an extension and ensuring that the extension is contemporary and of good quality, are the main principles that determine the extension's form. A formal structure is the style of coordinating and arranging the elements and parts of a composition to produce a consistent image. Therefore, it includes shape, size, colour, texture, location, and visual properties (Ching, 2011). Thus, the formal structure of an extension should serve to establish a visual relationship between the historical building and the extension.

In extensions built in an historical environment, the mass and facade effects of the building envelope are the first structures of note. The inner and outer border of the building is considered the building envelope and includes basic design elements such as material, colour, texture, form, mass, and rhythm when it is examined according to the historical environment in which it is located. These elements are the main factors

that form the visual effect of the building. For the purpose of this study, when the extensions to the buildings are discussed, these design elements are considered.

4.2.3. Visual Perception

The extension connects the historical building with the city, giving new life to both the building and the city. However, examining the contextual relationships of these extension forms requires perception, understanding, and interpretation of various values such as material, colour, texture, form, mass, rhythm, and their relationships with the historical building. The physical environmental conditions of the individual, the physiological and psychological factors experienced by that individual, and the sociocultural factors to which the individual is subjected constitute diversity and variability in the perception process. The psychological, physiological, and sociocultural factors that affect the perception process in terms of spatial perception provide a unique spatial perception for every user (Ünlü, 1998).

Since the 20th century, the concept of visual perception directly associated with advancements in technology, changing life conditions, sociocultural changes, and changing user requests has been more involved in the literature of architecture. In spatial perception, the acquisitions of the first image that occur in the physiological process do not depend only on the perceiving individual, but also vary depending on the properties of the perceived space. Spatial stimuli such as colour, texture, form, and light are defined as basic factors in visual perception (Başkaya et al., 2003). Thus, as perception is an active process and a subjective phenomenon, and as it is based on experiences, objectives/requirements are important.

Buildings include a wide range of stimulus elements that can be identified as stationary and dynamic. The perception of people is driven by not only the spatial form of these elements, but also the acquisition from the evaluation of light, colour, and texture of the space in combination. Spatial maps in the mind form a different visual perception depending on the individual. People's environmental perception processes and spatial behaviours persist in a particular social and physical environment (Karadağ and Turut, 2013). Gestalt theory, in which the whole is more meaningful than the sum of its parts, becomes a prominent factor (Senemoğlu, 2009).

Based on these findings from the literature, the hypotheses of this study are outlined as follows:

H1. Contemporary extensions are considered successful when they are designed in a harmonic method in accordance with criteria that affect the appearance as little as possible and harmonise with the historical structure; they are considered unsuccessful when they are designed with the contrast design method (Ahunbay, 2019; Zeren, 2010).

H2. A combination of the old and the new differs in visual perception in terms of methods used in the design of extension to a historical building. When the application examples are examined, it is seen that there are different approaches from repeating the old to conflicting with the old (Altınöz, 2010).

H3. In order for a new extension to be successful in terms of visual perception, repetition must be avoided (Aydın, 1998).

4.3. Methods

First, hypotheses were determined based on the data of the study area. Then, a detailed literature review was performed, and the main concepts and sub-concepts that constitute the subject of this study were discussed. Within the scope of this study, internationally valid legislation and regulations on restoration and preservation were also examined.

The nature of the subject, with so many international examples and in so many different contexts, is vast. Considering the broad scope of the subject, the literature was reviewed, accepting the difficulty of narrowing down the subject and discussing that it would be helpful to continue the discussion in this direction. In the literature review, more than 50 contemporary extensions to historical buildings located in different world regions were examined. Based on the reviews, this study suggests hypotheses for the visual perception and contextual relationship of contemporary extensions with historical buildings. To test the hypotheses, the focus was on buildings in Europe and America because they have undergone similar industrial revolution processes at similar periods. In the selection of building examples, attention was paid to having popular effects for cities (harbour, universities, etc.) and having tourist attractions (museums, culture centers, hotels, etc.). Other criteria for determining the examples were the construction year of the extension, whether the extension had previously been reviewed in the literature, and whether it was included in the architectural agenda. A final selection was made among the remaining structures based

on the condition that each must belong to a different architect and be a famous symbol and popular destination in their region. After this review and selection process, 15 contemporary extensions to historical buildings were determined as the sample. All these samples are more accessible with greater information in the public sphere.

The survey method was used to evaluate the buildings based on available information and images and to test the hypotheses by analysing visual perception and contextual relationships of 15 contemporary extensions constructed by different architects. For this study, a comprehensive survey form was prepared, including questions about the contemporary extensions selected as the sample. Participants were presented with texts containing detailed information (the names of the historical buildings, the countries in which they are located, the years in which the extensions were constructed, the functions of the historical buildings before the contemporary extensions, the new functions of the buildings after the contemporary extensions, etc.) as well as images of the historical buildings and their contemporary extensions so that they did not have to research the buildings asked in the survey on their own. The architects of the structures were not specified in the survey form to not affect the responses. Texts containing the same detailed information were presented separately for each sample to avoid skewing participants' judgement.

15 samples of famous symbols and popular destinations in their region, the survey asked questions about the visual perception and contextual relationships of the buildings, taking into account only the external visual aesthetics, rather than the successful use and operation of the completed buildings, their relationship to the broader environment and local culture. The questionnaire was administered to architects and interior architects. This group of participants was chosen, considering that due to the design education they received before, to evaluate the design elements of the contemporary extensions in terms of the design methods used in relation to the historical building would be more accurate than people who did not have a design education (Table 4.1).

Table 4.2: Respondents' demographic characteristics

Respondent's profile	Frequency (n)	Percentage (%)
Male	53	23.8%
Female	170	76.2%
Total	223	100.0%
Architect	98	43.9%
Interior Architect	125	56.1%
Total	223	100.0%

298 participants started the survey, but 223 completed all sections. Participants self-identified as 76% female and 24% male. %44 of the participants are architects, and %56 of them are interior architects. Regarding participant profiles, it was understood that mostly female interior architects completed the questionnaire. Results overlap between the four groups (male architects, male interior architects, female architects, and female interior architects). There was no significant gender and education difference in any variables in response to all the questionnaires and questions asked to participants.

A random sample was selected from the population at large. The equation takes into consideration the population size, the confidence level, and the sample proportion. To calculate the sample size, population of architects is estimated to be 3.8 million in the world, the confidence level was considered 95% (Z-score= 1.96), margin of error 7% (0.07) and the sample proportion was 50% (e= 0.5); thus, the sample size was calculated according to the following:

$$\text{sample size} = \text{N x } \frac{\frac{\text{Z}^2 \text{ x p x } (1-\text{p})}{\text{e}^2}}{\text{N} - 1 + \frac{\text{Z}^2 \text{ x p x } (1-\text{p})}{\text{e}^2}}$$

e^2 is the margin of error, p is the sample proportion, and N is the population size, thus:

$$\text{sample size} = 3800000 \text{ x } \frac{\frac{1.96^2 \text{ x } 0.5 \text{ x } (1-0.5)}{0.07^2}}{3800000 - 1 + \frac{1.96^2 \text{ x } 0.5 \text{ x } (1-0.5)}{0.07^2}} = 196$$

Therefore, a survey was conducted with 223 participants, who were more than 196 participants. After testing the reliability of the survey and receiving high-level reliability, mean, standard deviation, percentage and t-test were calculated to examine

the effect of contemporary extensions on the respondents' visual perception and to explain the relationships between the dependent and independent variables through the SPSS 25 program (Table 4.2). Furthermore, the most significant methodological contribution of this research is its identification and design of dependent variables, which were posited as the units of investigation for further stages.

Table 4.3: Independent samples test

		Evaluations of Samples Gender		Evaluations of Samples Profession	
		Equal variances assumed	Equal variances not assumed	Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	*F*	.096		.225	
	Sig.	.757		.636	
t-test for Equality of Means	*T*	−.181	−.177	−1.374	−1.382
	df	221	84.094	221	212.816
	Significance				
	One-Sided *p*	.428	.430	.085	.084
	Two-Sided *p*	.857	.860	.171	.168
	Mean Difference	−.02884	−.02884	−.18722	−.18722
	Std. Error Difference	.15955	.16295	.13627	.13546
	95% Confidence Interval of the Difference				
	Lower	−.34328	−.35289	−.45576	−.45422
	Upper	.28560	.29520	.08133	.07979

4.4. Case Study: 15 Contemporary Extensions of Different Architects

This section examines examples of the contemporary extensions to historical buildings influential in the worldwide architectural literature in terms of design methods and design elements. The examples were selected using the literature review method. During the selection process, while all buildings are historical and prestigious, priority was given to examples from different parts of the world instead of those built during a certain period or certain building types (Figure 4.1). A total of 15 examples of contemporary extensions to historical buildings in different countries were selected, and the design methods and design elements used in their design were analysed in terms of visual perception and contextual relationship (Table 4.3) (Figure 4.2). In parallel with these analyses, the design methods in terms of the envelope-context relationship used in the new structures in historical environments were considered, including repetition, authenticity, harmony, or contrast, in line with the purpose here. This study aimed to conduct an architectural evaluation of the structures with extensions in question.

Figure 4.1: Locations of the structures included in the study

Table 4.4: Details of the Structures Included in the Study

No	Building Name	Architect of Contemporary Extension	Year	Pre Function	Post Function	Country
1	Antwerp Port House	Zaha Hadid Architects	2016	Fire House	Harbor	Belgium
2	Museum de Fundatie	Bierman Henket architecten	2013	Court House	Museum	Netherlands
3	Kulturcenter Mariehøj	WE Architecture + Sophus Søbye Architects	2010	Culture Center	Culture Center	Denmark
4	Rotermann's Flour Warehouse	HGA (Hayashi – Grossschmidt Arhitektuur)	2009	Warehouse	Warehouse	Estonia
5	Vienna Gasometers	Coop Himmelb(l)au	2001	Gasometer	Housing	Austria
6	Dresden Military History Museum	Studio Libeskind	2011	Museum	Museum	Germany
7	Rapperswil-Jona Museum	:mlzd	2010	Museum	Museum	Switzerland
8	Reichstag	Foster + Partners	1999	Statehouse	Statehouse	Germany
9	Cremer Museum	SeARCH	2011	Warehouse Building	Museum	Netherlands
10	World Maritime University	Kim Utzon Arkitekter, TERROIR	2014	Office	University	Sweden
11	Forum – Kansas University	Studio 804	2015	University	University	USA
12	Bombay Sapphire Distillation Center	Heatherwick Studio	2014	Paper Mill	Distillation Plant	UK
13	Harvard Art Museum	Payette, Renzo Piano	2014	Museum	Museum	USA
14	Elbphilharmonie Hamburg	Herzog & de Meuron	2016	Warehouse	Performance Arts Center	Germany
15	Marques de Riscal Hotel	Frank Gehry	2006	Winehouse	Hotel	Spain

Figure 4.2: Photos of the structures included in the study

Source: Archdaily, 2022; Arkitera, 2022; Twistedsifter, 2022; Re-thinkingthefuture, 2022; Westo, 2022; Arquitecturaviva, 2022

4.5. Data Collection

The questionnaire data were collected online. The responses of 223 participants were evaluated. In the first part of the questionnaire, participants were asked to identify their gender and profession (architect or interior architect). In the second part, they were asked to evaluate the design elements of the contemporary extensions (material, colour, texture, form, mass, and rhythm) in terms of the design methods used in relation to the historical building (repetition, authenticity, harmony, and contrast). People were also asked to evaluate the relationships between the contemporary extensions and the historical buildings.

The questionnaire sought to answer to questions of how the contemporary extensions were perceived in terms of design methods (repetition, authenticity, harmony, and contrast) and to what degree the relationship between the contemporary extension and the historical buildings was positive. The success of the relationship of the contemporary extension with the historical building was rated using a 10-point Likert type scale (1= Unsuccessful, 10= Successful). The higher the respondent's score, the more positive their perception towards contemporary extensions was deemed to be.

Descriptive statistics were produced using the statistical package for the social sciences (SPSS).

4.6. Findings From the Field Work

The data yielded from the questionnaires were evaluated using two different methods, including the average of all responses from all participants and a comparison of responses from architects and those interior architects. The collected data were analysed by both descriptive and inferential statistics through SPSS. The conclusions drawn from these results are detailed below (Table 4.4).

Table 4.5: Visual Perception Rates of the Design Methods of Contemporary Extensions (Frequency and Percentage)

		R	A	H	C		R	A	H	C		R	A	H	C
		R: Repetition A: Authenticity H: Harmony C: Contrast													
Material	1	15	45	61	102	2	30	76	44	73	3	18	81	77	47
		6,7%	20,2%	27,4%	45,7%		13,5%	34,1%	19,7%	32,7%		8,1%	36,3%	34,5%	21,1%
Colour		12	57	94	60		14	49	121	39		17	60	125	21
		5,4%	25,6%	42,2%	26,9%		6,3%	22,0%	54,3%	17,5%		7,6%	26,9%	56,1%	9,4%
Fabric		19	64	52	88		13	75	65	70		16	72	84	51
		8,5%	28,7%	23,3%	39,5%		5,8%	33,6%	29,1%	31,4%		7,2%	32,3%	37,7%	22,9%
Form		12	64	46	101		23	54	42	104		15	87	96	25
		5,4%	28,7%	20,6%	45,3%		10,3%	24,2%	18,8%	46,6%		6,7%	39,0%	43,0%	11,2%
Mass		10	42	60	111		18	61	74	70		13	62	122	26
		4,5%	18,8%	26,9%	49,8%		8,1%	27,4%	33,2%	31,4%		5,8%	27,8%	54,7%	11,7%
Rhythm		18	51	91	63		22	71	60	70		24	68	105	26
		8,1%	22,9%	40,8%	28,3%		9,9%	31,8%	26,9%	31,4%		10,8%	30,5%	47,1%	11,7%
Material	4	15	81	76	51	5	32	50	51	90	6	25	75	61	62
		6,7%	36,3%	34,1%	22,9%		14,3%	22,4%	22,9%	40,4%		11,2%	33,6%	27,4%	27,8%
Colour		18	56	101	48		16	51	77	79		11	56	137	19
		8,1%	25,1%	45,3%	21,5%		7,2%	22,9%	34,5%	35,4%		4,9%	25,1%	61,4%	8,5%
Fabric		14	79	81	49		16	46	65	96		12	80	73	58
		6,3%	35,4%	36,3%	22,0%		7,2%	20,6%	29,1%	43,0%		5,4%	35,9%	32,7%	26,0%
Form		23	53	125	22		22	56	57	88		21	77	62	63
		10,3%	23,8%	56,1%	9,9%		9,9%	25,1%	25,6%	39,5%		9,4%	34,5%	27,8%	28,3%
Mass		19	50	126	28		12	60	72	79		15	66	80	62
		8,5%	22,4%	56,5%	12,6%		5,4%	26,9%	32,3%	35,4%		6,7%	29,6%	35,9%	27,8%
Rhythm		23	60	115	25		21	56	74	69		18	73	70	62
		10,3%	26,9%	51,6%	11,2%		10,8%	25,1%	33,2%	30,9%		8,1%	32,7%	31,4%	27,8%
Material	7	28	69	51	75	8	24	69	69	61	9	24	59	96	44
		12,6%	30,9%	22,9%	33,6%		10,8%	30,9%	30,9%	27,4%		10,8%	26,5%	43,0%	19,7%
Colour		19	69	104	31		17	68	103	35		15	59	123	26
		8,5%	30,9%	46,6%	13,9%		7,6%	30,5%	46,2%	15,7%		6,7%	26,5%	55,2%	11,7%
Fabric		21	74	69	59		17	66	80	60		13	75	109	26
		9,4%	33,2%	30,9%	26,5%		7,6%	29,6%	35,9%	26,9%		5,8%	33,6%	48,9%	11,7%
Form		22	79	68	54		17	79	82	45		24	60	127	12
		9,9%	35,4%	30,5%	24,2%		7,6%	35,4%	36,8%	20,2%		10,8%	26,9%	57,0%	5,4%
Mass		23	63	101	36		21	65	105	32		23	52	132	16
		10,3%	28,3%	45,3%	16,1%		9,4%	29,1%	47,1%	14,3%		10,3%	23,3%	59,2%	7,2%
Rhythm		25	76	74	48		27	68	83	45		23	52	126	22
		11,2%	34,1%	33,2%	21,5%		12,1%	30,5%	37,2%	20,2%		10,3%	23,3%	56,5%	9,9%
Material	10	20	78	54	71	11	20	77	87	39	12	20	88	55	60
		9,0%	35,0%	24,2%	31,8%		9,0%	34,5%	39,0%	17,5%		9,0%	39,5%	24,7%	26,9%
Colour		14	63	98	48		12	54	143	14		15	68	107	33
		6,3%	28,3%	44,0%	21,5%		5,4%	24,2%	64,1%	6,3%		6,7%	30,5%	48,0%	14,8%
Fabric		14	66	71	72		10	73	99	41		11	75	78	59
		6,3%	29,6%	31,8%	32,3%		4,5%	32,7%	44,4%	18,4%		4,9%	33,6%	35,0%	26,5%
Form		12	73	66	72		21	60	121	21		15	81	66	61
		5,4%	32,7%	29,6%	32,3%		9,4%	26,9%	54,3%	9,4%		6,7%	36,3%	29,6%	27,4%
Mass		16	70	82	55		21	58	127	17		16	74	86	47
		7,2%	31,4%	36,8%	24,7%		9,4%	26,0%	57,0%	7,6%		7,2%	33,2%	38,6%	21,1%
Rhythm		17	73	67	66		20	64	121	18		17	86	65	55
		7,6%	32,7%	30,0%	29,6%		9,0%	28,7%	54,3%	8,1%		7,6%	38,6%	29,1%	24,7%
Material	13	31	49	72	71	14	24	74	51	74	15	16	71	37	99
		13,9%	22,0%	32,3%	31,8%		10,8%	33,2%	22,9%	33,2%		7,2%	31,8%	16,6%	44,4%
Colour		14	49	104	56		11	70	69	73		13	69	42	99
		6,3%	22,0%	46,6%	25,1%		4,9%	31,4%	31,0%	32,7%		5,8%	30,9%	18,8%	44,4%
Fabric		23	54	76	70		16	76	70	61		18	65	48	92
		10,3%	24,2%	34,1%	31,4%		7,2%	34,1%	31,4%	27,4%		8,1%	29,1%	21,5%	41,3%
Form		28	52	104	39		12	81	77	53		18	68	49	88
		12,6%	23,3%	46,6%	17,5%		5,4%	36,3%	34,5%	23,8%		8,1%	30,5%	22,0%	39,5%
Mass		22	48	118	35		17	73	90	43		17	58	63	85
		9,9%	21,5%	52,9%	15,7%		7,6%	32,7%	40,4%	19,3%		7,6%	26,0%	28,3%	38,1%
Rhythm		22	51	100	50		16	81	85	41		20	72	50	81
		9,9%	22,9%	44,8%	22,4%		7,2%	36,3%	38,1%	18,4%		9,0%	32,3%	22,4%	36,3%

The results of the questionnaires indicate that when participants compared the contemporary extensions with the historical buildings in terms of six design elements

(material, colour, texture, form, mass, rhythm), the most visually perceived design method was harmony (38%), while the least visually perceived was repetition (8%). The remaining two design methods, authenticity, and contrast had visual perception rates of 29% and 25%, respectively (Figure 4.3).

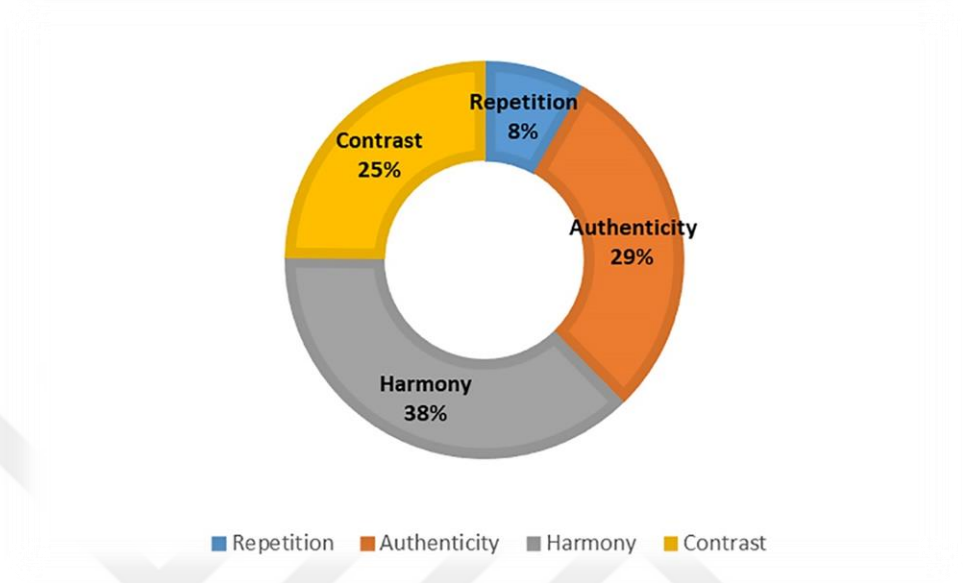
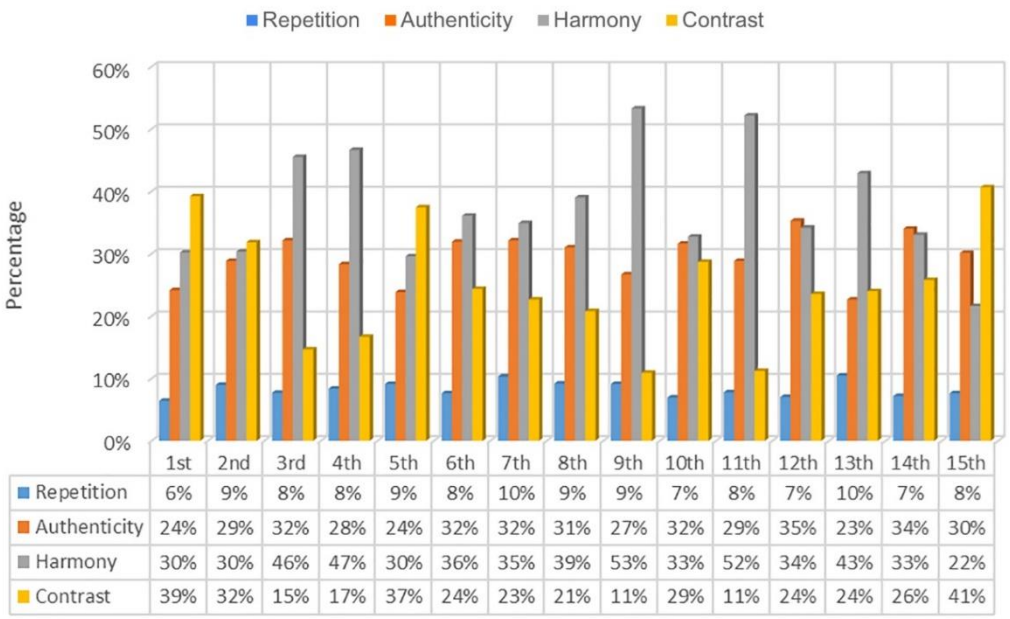


Figure 4.3: Visual perception rates of the design methods of contemporary extensions

The results also indicated that the harmony design method was visually perceived more predominantly than other methods in 9 out of 15 contemporary extensions as a result of the comparison of six design elements. It was also concluded that the contrast and authenticity methods were visually perceived in 4 and 2 out of 15 contemporary extensions, respectively. The repetition design method was not perceived more predominantly than other method for any extension (Figure 4.4).



	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th
Repetition	6%	9%	8%	8%	9%	8%	10%	9%	9%	7%	8%	7%	10%	7%	8%
Authenticity	24%	29%	32%	28%	24%	32%	32%	31%	27%	32%	29%	35%	23%	34%	30%
Harmony	30%	30%	46%	47%	30%	36%	35%	39%	53%	33%	52%	34%	43%	33%	22%
Contrast	39%	32%	15%	17%	37%	24%	23%	21%	11%	29%	11%	24%	24%	26%	41%

Figure 4.4: Visual perception rates of the contemporary extensions in terms of design methods

The questionnaire also asked participants to evaluate the relationship between the historical buildings and the contemporary extensions based on a 10-point Likert type scale (1= Unsuccessful, 10= Successful). Sample 11, the Forum – Kansas University, was determined to have the highest successful relationship between the addition and the original building (7.68 points). Sample 9, the Cremer Museum (7.58 points), and sample 12, the Bombay Sapphire Distillation Center in BK (7.52 points), also had successful relationships between the contemporary extension and the historical building. Building sample 12, the Vienna Gasometers, had the most unsuccessful structure (5.75 points), followed by sample 1, the Antwerp Port House (5.93 points), and sample 2, the Museum de Fundatie (6.32 points) (Table 4.5) (Figure 4.5).

Table 4.6: The Mean Score of the Relationship Between Historical Buildings and Their Contemporary Extensions

No	Building Name	Mean	Std. Deviation	*N*
1	Antwerp Port House	5.9283	2.11052	223
2	Museum de Fundatie	6.3184	2.11855	
3	Kulturcenter Mariehøj	7.4215	1.68776	
4	Rotermann's Flour Warehouse	7.3632	1.74188	
5	Vienna Gasometers	5.7489	2.28384	
6	Dresden Military History Museum	7.4574	1.79758	
7	Rapperswil-Jona Museum	6.9283	2.01666	
8	Reichstag	7.3587	1.78999	
9	Cremer Museum	7.5785	1.80637	
10	World Maritime University	6.9193	1.81156	
11	Forum – Kansas University	7.6816	1.73776	
12	Bombay Sapphire Distillation Center	7.5157	1.83766	
13	Harvard Art Museum	6.3722	1.98883	
14	Elbphilharmonie Hamburg	7.1794	1.87543	
15	Marques de Riscal Hotel	6.6906	2.35733	

Forum – Kansas University **Vienna Gasometers**

Figure 4.5: The highest successful (Forum – Kansas University) and the most unsuccessful (Vienna Gasometers) structures

Source: Archdaily, 2022; Archello, 2022

When the three most unsuccessful relationships between historical buildings and their contemporary extensions were examined individually, these buildings were mostly characterised as using the contrast design method in terms of visual perception, according to questionnaire results (Figure 4.6).

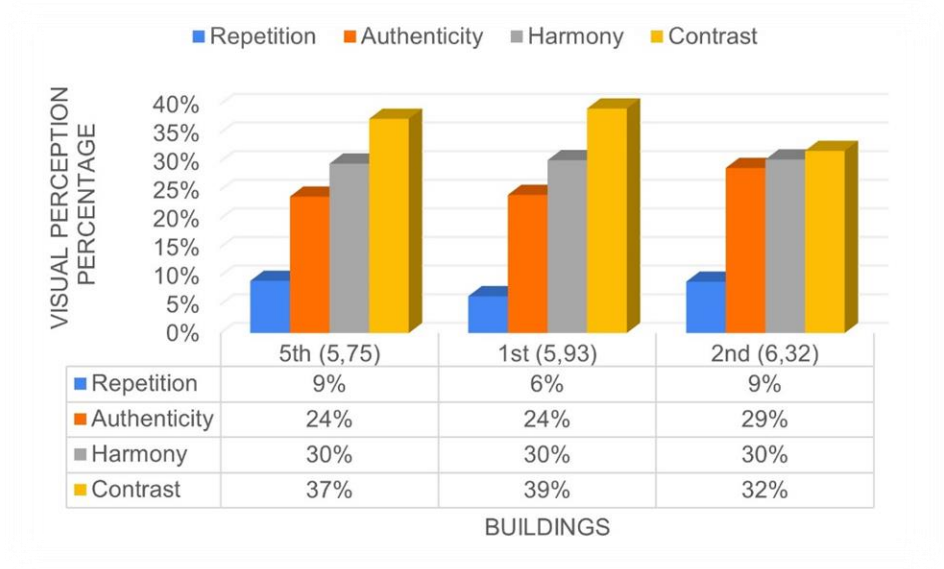


Figure 4.6: Percentage distribution of the 3 buildings considered the most unsuccessful in terms of the contemporary extension relationship by design methods

When the two most successful relationships between the historical buildings and their contemporary extensions were examined individually, these buildings were mostly characterised as using the harmony design method in terms of visual perception, according to the questionnaire results. These two buildings also had the lowest percentage for being characterised as using the contrast design method in terms of visual perception (Figure 4.7).

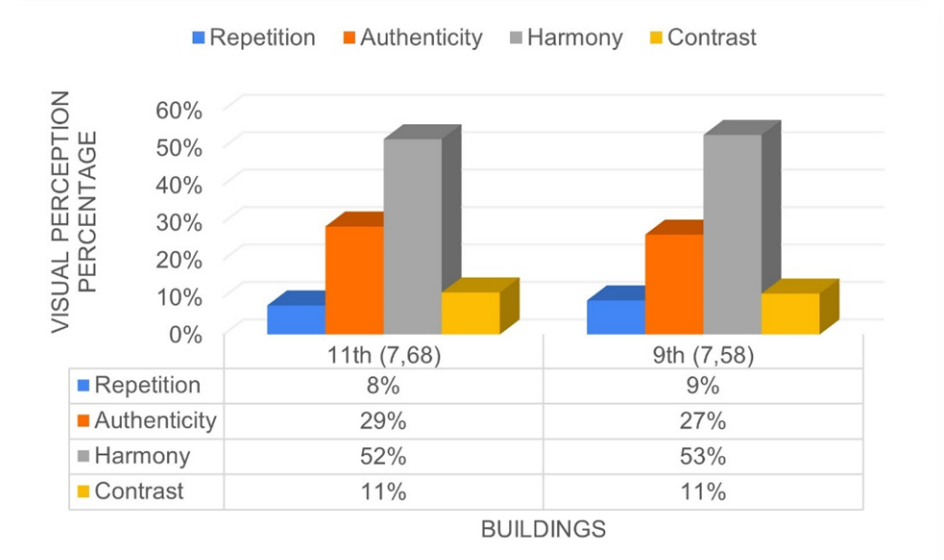


Figure 4.7: Percentage distribution of the 2 buildings considered the most successful in terms of the contemporary extension relationship by design methods

When responses to the questions related to the relationship of the extensions with their historical buildings were examined individually, the building found to be the most authentic was the Bombay Sapphire Distillation Center, the building found to be the most harmonic was the Cremer Museum, and the building with the most contrast was the Marques de Riscal Hotel (Figure 4.8). This survey data shows which design method is considered more, rather than which buildings are perceived to be more successful.

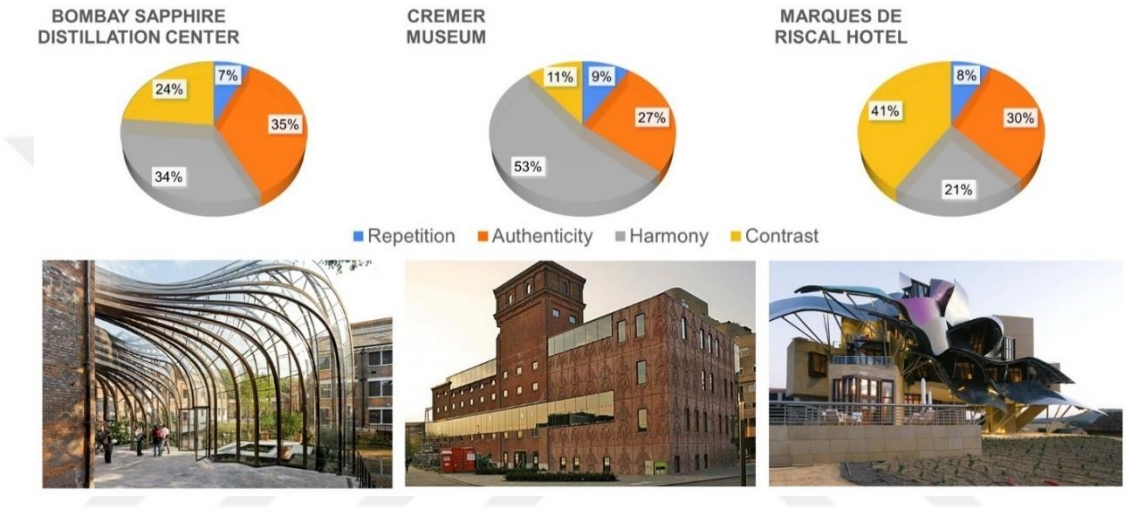


Figure 4.8: Percentage distribution of the buildings with highest levels of authenticity, harmony, and contrast

Source: Arquitecturaviva, 2022; Westo, 2022

4.7. Results

This study aimed to draw attention to the design methods and elements considered in the historical texture of extension construction and to emphasise the subject's importance. In the area of preservation and restoration, contemporary extensions on historical buildings are frequently built. When the buildings in question do not provide sufficient spatial opportunities for the new functions that they can be acquired through an extension, expansion options using horizontal, vertical, underground, or mixed extensions are evaluated (Şahin, 1997). Extensions to historical buildings enrich the historical environment and add symbolic character to the building requiring expansion. Structures added to existing buildings can ensure that the building remains part of the city's history. This study used a research model that examined how architects and

interior architects observe and evaluate contemporary extensions to historical buildings.

In the questionnaire, all design elements affecting visual perception were questioned to determine the visual perception and contextual relationship of contemporary extensions to existing historical buildings. As a result of a literature review and questionnaire, the results and suggestions of this study's hypotheses are as follows:

H1. The hypothesis suggesting that contemporary extensions are successful when they are designed using the harmony method and are unsuccessful when designed with the contrast method is supported with the data of Figures 4.6 and 4.7.

H2. When the examples of contemporary extensions to historical buildings were examined, this hypothesis suggesting that there are different design approaches varying from repeating the old to creating a contrast to the old is supported with the data in Table 4.5 and Figure 4.8.

H3. The study found no data to suggest that contemporary extensions should not copy the architecture of historical buildings to be successful in terms of visual perception. As none of the 15 extension samples were visually perceived as copies of their original buildings, a success evaluation was not performed.

Of the four design methods evaluated, authenticity, harmony, and contrast were most frequently perceived by participants (Figure 4.3 and 4.4). The repetition method tended to be avoided and contemporary extensions were constructed using an authentic, harmonic, or contrast design in accordance with the legislation (Figure 4.4 and 4.8). Extensions out of context, constructed only for the purpose of repetition, should be avoided. To consider a building extension successful, it may emulate and be based on the authentic texture of the building but should not be planned to be an exact copy of the original building.

When discussing these design methods and elements in the construction of a contemporary extension to an historical building with historical texture, the aim should be to ensure that the contemporary extension mass will contribute to existing historical texture, and to transfer both to future generations. An extension to an historical building should have the proper architectural design and establish the correct visual relationship with the historical building, the historical texture, and the architectural environment. It is essential to respect and emphasise historical values. Although

targeting "harmony" seems to be the most successful solution for contemporary additions within the scope of the study, it is important for a successful contemporary addition to create designs that take into account the values of the historical building without copying the historical buildings. Any extensions made should be reversible to allow for replacement with more appropriate measures when new information becomes available in the future. If they are not entirely reversible, interventions should not hinder future interventions (ICOMOS, 2003).

The results of the questionnaires indicate that participants compared the contemporary extensions to the historical buildings in terms of six design elements (material, color, fabric, form, mass, and rhythm) and four design methods (harmony, repetition, authenticity, and contrast).

4.8. Limitations

This research has limitations and faced several limitations. Besides, the findings of this study are considered limited because they focus on the relationship between the external visual aesthetics of the historical building and the contemporary extension alone. Future studies should include more examples of contemporary extensions to historical buildings worldwide. Despite increasing academics on historical buildings and contemporary extensions, there is still considerable scope for future empirical research, predominantly qualitative in-depth studies of the successful use and operation of the completed buildings, their relationship to the broader environment, local culture, and legislative restrictions.

4.9. Conclusion

Adaptive reuse of historical buildings and contemporary extensions to historical buildings have been recognised as an essential economic development tool generating revenue and employment for nations’ economies. In this context, the research's main problem was how the region's cultural and economic potential could be used more effectively and sustainably by preserving and refunctioning the historical and cultural structure.

Extension architecture in historical cities helps revitalise cultural heritage through respectful creativity and can increase tourist visitation. So, this research has investigated the visual perception and contextual relationship of contemporary extensions to existing historical buildings in terms of design elements affecting visual

perception (material, colour, fabric, form, mass, and rhythm) to help regenerate a declining historic city.

In conclusion about a questionnaire and study, the implications of the measures of success for an architect looking to undertake a contemporary extension might be as follows:

- In constructing a contemporary extension to the historical environment, the material, colour, fabric, form, mass, and rhythm components of the architectural composition of the extension emerge as concepts that serve the visual relationship between the two buildings.
- The data in the questionnaire supports the study suggesting that contemporary extensions are more successful when designed using the authenticity method and are less successful when designed with the repetition method.
- The study found data to suggest that contemporary extensions should not copy the architecture of historical buildings to succeed in design attraction.
- By conservation theory, contemporary extensions must reflect the period in which they were built and not become an unreadable part of the original building. The necessity of separating contemporary extensions from the original identity of the building is also emphasised in the Venice Charter.
- Extensions out of context, constructed for repetition, should be avoided. To consider a building extension successful and attractive, it may emulate and be based on the authentic texture of the building. However, it should not be planned to be an exact copy of the original building.
- When the most unsuccessful relationships between historic buildings and their contemporary extensions were examined individually, these buildings were mainly characterised as using the repetition design method, according to questionnaire results.
- The contemporary extension's design method, extension style, and size vary depending on the relationship between the old function and the new function of the building.
- In line with the examples examined, it is understood that the way the material is used helps the transformed building to be perceived as a whole or to make the contemporary extensions stand out, draw attention, and emphasise. Based on these

evaluations, how the material is used also significantly impacts the contemporary extension's role in bringing together the traditional and the modern, the old and the new, the past and the future.

The findings of this study indicate that the most appropriate designs to revitalise cities that have experienced urban decline over time are; aim to create strategic information and suggestions that may be useful for managing refunctioning and contemporary extension processes and to provide guidance by providing awareness on how to benefit from them.

Design policies to be developed for the future of historical buildings can only be successful if design methods and elements of contemporary extensions affecting historical buildings are considered. The outcomes of the study may provide more in depth comments when examined more comprehensively with different participant groups (public officials, tourists, tour organisers, etc.).

It is expected that the outputs of this study will contribute to the tourism potential of historic areas and the sustainable development action plan that central governments will prepare for living areas with cultural and historical value. This study, which determines the priority design decisions to be taken by ensuring the participation of architects and interior architects in designing and planning, offers essential methods and findings for further sustainable planning studies for historical areas in countries.

Considering contemporary extension strategies with this study, the application of contemporary extensions will serve as a guiding reference for designers and researchers in their relationship with historical buildings. Based on this study, analysis methods for refunctioning and additional building strategies will be developed for future studies.

CHAPTER 5

EXAMINATION OF RURAL ARCHITECTURE THAT SHAPES SUSTAINABLE TOURISM IN EMERGING ECONOMIES THROUGH STAKEHOLDER PERSPECTIVES: SILE, ISTANBUL[4]

5.1. Introduction

Rural areas are settlements with their own unique living culture formed as a result of human activities and human-nature relationship from the past to the present. In shaping the traditional life and texture in rural areas; natural conditions (climate, vegetation, land structure, soil characteristics, etc.), economic conditions, social and cultural structure features, traditions, and customs are effective (Eldem, 1984). With increasing people's search for alternative holidays, rural areas are attracting more attention with their natural, cultural, and historical values lately. Besides the natural environment, especially the historical environment is an important and attractive factor in terms of rural tourism. Cultural, religious, social and historical buildings and residences in rural areas are important attraction elements for rural tourism. Historical buildings in rural areas are tangible elements that transfer the economic and technological conditions, cultures, and social lives of the societies they belong to the next generations, as well as being a source for the history of architecture. Due to the developing technologies and changing social needs over time, structures also have to change (Maxwell, 1997). Along with these, the increase of rural tourism in the region affects the existing structures and new constructions.

Rural structures, which cannot adapt to the changing dynamics and conditions over time, are detached from their context like other architectural structures, cannot survive

[4] This chapter is based on the paper: Kurnaz, A. and Anıktar, S. (2023). Examination of rural architecture that shapes sustainable tourism in emerging economies through stakeholder perspectives: Sile, Istanbul. Current Issues in Tourism, 1-17. http://doi.org/10.1080/13683500.2023.2223913

economically, and are abandoned by losing their functions and not being used. The abandonment of historical buildings, which have important values for the rural area and the society, and their idle state, eliminates the local people's sense of belonging and experience over time (Ahunbay, 2010) It is undesirable to abandon historical rural buildings, as they determine the characteristic identity of the settlements they are located in and at the same time are concrete documents of the social life and cultures of the past periods. Considering today's economic conditions, it is a very suitable solution for them to continue their existence by preserving their important architectural features, instead of being abandoned, by assuming a new function in accordance with changing needs (Akturk and Ediz, 2020). Historical buildings build a bridge between the past and the future. Preserving and refunctioning historical buildings supports sustainability in terms of economic, social, and cultural aspects (Traska, 2007; Vehbi et al., 2016). These historical structures, which have been refunctioned rather than demolished, also attract attention with their characteristics of being symbols in their regions (Ulug, 2022).

In order to meet the needs of the increasing number of tourists in rural areas, it is necessary to refunction the idle historical buildings with touristic functions and make them suitable for rural tourism service and construct new contemporary additional structures to historical buildings if needed. While all these are being done, it is imperative that interventions are made by preserving the historical values and originality of historical rural buildings. Historical cultural assets, which are refunctionalized for rural tourism purposes, become the focus of attention of tourists if they are properly restored. In this context, to use the tourism potential of rural areas more effectively in a sustainable way, the preservation and refunctioning of the buildings and the making of contemporary additions to these historical structures will be examined within the scope of the research.

In the literature, it is seen that there are very rare scientific studies on the refunctioning of the rural architectural heritage in the historical Sile district of Istanbul and bringing it into rural tourism. There is no study that examines Akcakese Village in the historical Sile district for sustainable tourism from the perspective of stakeholders in terms of rural architecture. Akcakese Village is a rural area facing the impacts of depopulation, aging, and socio-economic decline. The main problem of the research is to what extent the rural architecture of Akcakese Village can serve as a tool for sustainable

development. From this point of view, within the scope of the research, the situation regarding the refunctioning of the idle structures focused on sustainable rural tourism and the modern additions to these historical structures were examined through stakeholder perspectives through Akcakese Village of the historical Sile district of Istanbul. The main purpose of this study is to contribute to the literature by producing original information and to present cultural policies and strategies that can guide central and local governments as a result of all this review and offer practical and sustainable rural tourism suggestions.

In the study, it is aimed to prevent the migration of local communities to another place, the disappearance of cultural traditions over time, the inactivity of historical rural buildings, and the transformation of rural areas into places that are not suitable for daily life and rituals of the local people. For this purpose, a participatory perspective will be presented by considering the differences of Akcakese Village in Sile, as in the case studies, with a holistic database to be created in line with the views of tourists and other stakeholders. In this way, the study will contribute to the determination of the applications that can be made to revitalize the historical rural areas, which have experienced a similar decline with Akcakese Village over time, with a focus on rural tourism. In rural settlements, solution proposals including refunctioning the tourism-oriented historical building and its immediate surroundings and contemporary additional building interventions are important in presenting a different perspective to both local people and relevant researchers and designers and creating an infrastructure. This research proposes a priority ranking framework to develop rural sustainable tourism strategies in Akcakese.

5.2. Literature Review

5.2.1. Rural architecture and historic preservation

Rural architecture is the formations that have been created by the communities in rural areas based on experience and knowledge after continuous trial and error experiences, built by using local materials and construction techniques obtained from the environment, in harmony with the environment and reflecting the culture of the society. Rural architecture, which develops with the natural and cultural conditions in the area where it is located, has its own unique character. In some cases, this rural architectural heritage can become idle by not being able to respond to the changing and developing needs over time. When the concept of refunctioning in the context of

idle historical rural buildings is evaluated, it is necessary to make an examination by considering different variables and stakeholders together and to plan the refunctioning with some criteria created as a result of all these examinations (Foucault and Miskowiec, 1986). In this context, the socio-cultural and demographic data of the rural area are effective, as well as the determination of the physical condition of the buildings in the rural area (Akturk et al., 2019).

The historical buildings, which were once used for different purposes, gain new functions and their reuse increases the value of the buildings and the area, while contributing to the economic, cultural, and social development of the local people (Yuceer et al., 2018). Reuse is an important strategy to achieve sustainability as it ensures a continuous building life cycle and prevents building demolition. Therefore, refunctioning is considered as one of the main strategies for the preservation of cultural heritage (Mckenzie and Hutton, 2015; Robert, 1989). In this framework, the refunctioning process of the tourism-oriented built rural environment needs to be planned in a way that will meet the needs of rural tourism and to generate employment opportunities for the local community, within the framework of relevant legal regulations. Due to refunctioning, it may be necessary to construct additional buildings to historical rural buildings. It can be stated that the construction of additional buildings to historical rural buildings stems from two main reasons. The first of these reasons is the need for new spaces to serve the new functions given to the building in the process of refunctioning the historical buildings. The second is the need to integrate the damaged parts of historical buildings that were damaged due to some reasons over time in terms of aesthetic, functional or structural balance (Hurol et al., 2015). Article 13 of the Venice Charter (ICOMOS, 1964) includes the following statements about the additions made to historical buildings for the protection of cultural heritage: “Additions cannot be allowed except in so far as they do not detract from the interesting parts of the building, its traditional setting, the balance of its composition and its relationship with its surroundings”. Contemporary additions to historical buildings are applications that establish the bonds of the past with the present and enable them to be carried to the future (Casakin, 2006; Letzter, 2022).

Designing some additions for refunctioning an existing historical building and providing a balanced combination of old and new is considered as a more detailed and multidimensional issue than designing a new building (Ahunbay, 2019).

Contemporary additions, a completely new design product, are arranged according to the historical structure to which they will relate and articulate (Disli, 2018). In the design decisions taken regarding the contemporary additions to come within the scope of refunctioning the idle rural historical buildings, first of all, the historical building and its context should be well analyzed in order for the new addition to be a structure that is both respectful to the past and reflecting the characteristics of the time it is in (Letzter and Neuman, 2022). For the contemporary addition design, it is necessary to investigate the period in which the historical building was built, to determine the interventions from the past to the present, to determine the conservation principles and the restoration techniques to be used (Plevoets, 2021). According to the examinations, contemporary additions to rural buildings have spatial organization types such as roof completion, facade completion, transition element between two buildings, circulation elements articulated to the structure, and eaves elements added to the structure.

For example, the old mill and the ancient stone walls were integrated into the project through their conservation and reuse. The hospitality functions are grafted into the ruins through a simple construction solution; thus, the historical walls return to life (Figure 5.1).

Figure 5.1: Construction solution for the old mill

Source: Stempel and Tesar Architecture, 2017

This old building, initially a mill, was left neglected for years until architects gave it a new life. The architects have turned this mill in tatter into a housing unit worth modern dweller. The two-story building was cut into two parts, and the roof in between these parts was left exposed to let natural light and air into living spaces comprising floor-to-ceiling glass walls.

5.2.2. Sustainable rural tourism and examples

Cities that have become crowded with modernization and standardized lives have changed people's expectations from tourism, making it attractive to seek alternative holidays in rural areas that have natural, cultural, and historical resource value. Quality environmental, historical, and cultural experiences are the critical components sought by the majority of rural visitors (Aranzabal et al., 2009). The natural life offered by rural life, various customs of the regions, clothing styles, various dishes made with natural products and building typologies that vary according to the regions attract the attention of tourists. Urban people go to rural areas mostly for recreational purposes, as a daily or short- term stay tourism. The desire of the citizens to be in rural areas causes the intensive use of rural areas under the name of rural tourism (Vehbi et al., 2019). Rural tourism is an essential sustainable development strategy for some rural areas (OECD, 1994; Sharpley, 2005). Sustainable rural tourism is considered as a catalyst that improves the living conditions of local people by increasing the economic vitality of rural areas (Choi and Sirakaya, 2006; Gao et al., 2009). Rural tourism is one of the most important activities that will solve the problems of rural areas and enable them to develop economically. Rural tourism activities, which are considered a tool for the development of rural areas, have positive effects on sustainable livelihood, community well-being, providing new job opportunities for those living in rural areas, protection of cultural and natural heritage, reduction of population loss, and migration in rural areas, and active participation of women in working life (Vehbi et al., 2022).

These areas usually have valuable architectural heritage resources (OECD, 1994; Sharpley, 2005). The rural heritage is shaped by the daily life, traditions, building technologies, and cultural activities of past societies, European Commission; It is defined as areas where small-scale businesses with historical buildings provide services such as accommodation, food, and beverage to visitors who aim to have a pleasant time by integrating with local values (European Commission, 2000). Considering the current tourism trends, refunctioning the idle historical rural buildings as heritage assets and adding to the historical buildings as needed has the potential to contribute significantly to the touristic activities in their environment (Vehbi et al., 2016). However, despite all this potential, care should be taken to preserve the historical and original values of the buildings in rural areas and to ensure that rural life is not damaged (Croes, 2014; Matanle, 2007).

This study investigated the effects of rural tourism activities in the world and in Turkey on living spaces, the dimensions of their reflection on socio-cultural, socio-economic, and spatial structure, and which structures are used to produce solutions. When we look at the successful examples of sustainable rural tourism around the world, it is seen that these areas have refunctioned the historical rural structures for rural tourism use and added to these historical structures, thus reviving tourism in their regions:

Although the structures called "Trulli" in the Alberobello region of Italy were used as warehouses or animal shelters for agricultural tools in the past, they were later converted into residences and accommodation structures with a tourism focus. The Alberobello district was almost completely abandoned in the twentieth century. However, due to its special architecture, it was accepted as an important part of the rural architectural heritage and started to be used again through rural tourism. Agricultural activities that used to be a source of livelihood have been replaced by tourism which characterizes the economy. By the 2000s, the number of hotels in the region increased to 12 and the number of pensions to 17. It has been rented out to tourists by the local people renovating their old historical houses. Most of the buildings have been refunctionalized for commercial purposes such as restaurants, souvenir shops, hotels, and pensions (Todisco et al., 2017). Similarly, some of the houses in Vlkolinec Village in Slovakia were refunctionalized to meet the accommodation needs of tourists. In addition, souvenirs in the village, food places where local products are presented and the rural life museum where rural life is promoted are some of the areas that are functional for tourists (Petrovic et al., 2021). The old school building in Nymfaio Village in Greece was repaired and started to be used by gaining new functions such as a study office, meeting rooms, and a museum. Again, it is seen that historical rural buildings in the Matera region in Italy, Sirince Village and Beypazari district in Turkey have been refunctionalized for rural tourism use and additions have been made to these historical buildings for needs.

5.3. Methodology

5.3.1. Research questions

Researchers argue that more research is needed on the rural architecture that shapes sustainable tourism. The present study aims to close this gap by addressing the following research questions:

To what extent does rural architecture have the capacity to facilitate socio-cultural sustainable revitalization for a rural community in decline?

What is the role of the reuse of idle buildings in rural areas and their contemporary extensions in sustainable tourism-oriented rural revitalization?

What stakeholders does rural architecture have in shaping sustainable tourism?

What is the importance of rural tourism in terms of stakeholder perspectives?

To answer these questions, the authors use an interdisciplinary approach to study how respondents from different stakeholder perspectives define "rural architecture" and "sustainable tourism".

5.3.2. Research approach

Within the scope of this study, the concepts related to sustainable rural tourism, rural architecture, preservation of historical buildings, refunctioning and contemporary addition to historical buildings have been researched and detailed examinations have been made on how they are handled in international conservation declarations, regulations, laws, legislations, and publications. Within the scope of international conventions on historical sites, legal regulations such as the Venice Charter (ICOMOS, 1964), Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO, 1972), The Declaration of Amsterdam (ICOMOS, 1975), Convention for the Safeguarding of the Intangible Cultural Heritage (UNESCO, 2003), Charter for The Conservation of Historic Towns and Urban Areas (Washington Charter) (ICOMOS, 1987), International Cultural Tourism Charter (ICOMOS, 1999b), ICOMOS Charter on the Built Vernacular Heritage (ICOMOS, 1999a), Vienna Memorandum (UNESCO, 2005), The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas (ICOMOS, 2011) cover important criteria for reuse and have been examined in detail in order to create the legal framework of the study.

Based on the data obtained from the inventory studies, research has been carried out to determine the touristic and historical values (tangible and intangible cultural assets) of the Sile settlement and Akcakese Village. The factors that shape the rural architectural texture of the village have been analyzed. Field visits were carried out during the research, and observations and examinations were made. Field studies cover the determination of cultural and historical architectural heritage values, examination

of buildings, and definition of rural architectural heritage values in the area. With the field studies, the determination of historical architectural heritage values depending on the socio- cultural, economic, and natural factors that shape the architectural texture in Akcakese Village, the fiction of historical buildings and their environments, the spatial characteristics of the buildings, the potential of the open and closed areas in the building site were analyzed. The examination of the buildings in the architectural framework was provided by environmental, functional, and symbolic methods, starting from the upper scale of the location of the buildings. In the meantime, the study was supported by the photography method in order to document the current situation. After all these analyses, the documents showing the historical importance of the buildings were analyzed on-site within the scope of the study for sustainable rural tourism.

This study proposes a new multidimensional model to measure the potential value of the region in terms of rural tourism, with a different approach from the theoretical and practical infrastructure of previous studies. Purposive sampling (Tongco, 2007) targeted different stakeholder groups. Tourism practices cannot make serious advancements without direct attention to tourists' complex opinions (Song et al., 2012). A mixed methods approach underpins this study, comprised of key stakeholder interviews, including tourists, residents, public officials, and tour organizers who have knowledge of the research area and work in the region. More specifically, a concurrent mixed methods approach following Creswell and Clark (2017) was adopted by concomitantly conducting and analysing qualitative and quantitative methods. Both questionnaire data and semi-structured interviews were collected.

This research will use the SWOT approach to understand the primary ways a historic district can use to revitalize its cultural heritage physically, socially, and economically for Akcakese Village. SWOT analysis is a method used in architectural research. As a result of the analysis, strengths and weaknesses, opportunities and threats are determined (Lak et al., 2020). In this context, it was thought that it would be useful to develop hybrid methods used in different disciplines for use in architecture. The SWOT analysis, based on field observation, offers to determine the negative and positive effects of the current situation for the research area (Demir et al., 2016).

The components of the SWOT analysis are discussed qualitatively and indicate the negative and positive effects of the case area. Despite the advantages of SWOT in

decision-making, the use of conventional SWOT analysis has no means of determining the importance of each SWOT factor (Shinno et al., 2006). Thus, more than utilizing SWOT alone in the decision-making process is required. This study combines Analytic Hierarchy Process (AHP) with SWOT analysis (Wickramasinghe and Takano, 2009). AHP is a multi-criteria decision-making method developed by Thomas Saaty (1980). This method has been preferred because it makes it convenient to simplify the expression of the multi-criteria and complex structure of the problem by dividing it into sub-hierarchical clusters, to determine the weights of the sub-criteria by comparing them with each other, and to measure the indicators with different weights. It is a method developed for the decision maker to determine the order of importance among the alternatives in complex decision-making problems and to choose the appropriate one (Lak et al., 2020). Prioritizing the strategies obtained from the SWOT analysis, expert opinions were collected through pairwise comparison questionnaires and analyzed using an AHP model with the help of Super Decision software to score the extracted items.

The pairwise comparison method evaluated the SWOT criteria by tourists and residents, public officials, and tour organizers. Respondents were selected through a cluster sampling approach based on place and time, where the days and areas for undertaking the interviews were randomly identified. Thus, it is planned to create new policies on what to do with a multidisciplinary, academic, holistic, and participatory approach and to understand the strategies to increase the capacity of sustainable tourism. Finally, implications of the results for developing and managing rural tourism experiences in rural destinations, specifically in Akcakese Village under analysis, were discussed.

5.4. Case Study: Akcakese Village in Sile

As the study area, Akcakese Village, where the coastal village of Sile district of Istanbul, was chosen as a community-based tourism destination that embraces the sustainability approach and values the role of local people in tourism. Throughout history, Sile region has hosted many civilizations (Hittite, Phrygian, Lydian, Persian, Bithynia, Roman, Genoese, Byzantine, Seljuk, and Ottoman Empire) and has become the meeting point of many cultures. Its historical and cultural heritage, natural beauties and high tourism potential have always made Sile special (Temir, 2010). Sile, which is not far from the centre of Istanbul, stands out in terms of sustainable rural tourism

with its location in a metropolitan city like Istanbul with a large population, its long coastal relationship with the sea and its rich historical architecture.

According to the Republic of Turkey Ministry of Culture and Tourism data, the number of visits to the facilities in Sile district in 2019 meets only 0.10% of Turkey's. While the occupancy rates of accommodation structures are 58.9% in Turkey, it is 23% in Sile. Again, according to the data of the Ministry, the number of visitors coming to Istanbul is 14,906,663. Sile district meets only 0.55% of this amount (KTB, 2019). When these data are evaluated, it is seen that the utilization rate of the tourism potential of the district is far below that of Turkey. Despite the traditional production of Sile cloth and its historical architectural texture, which is protected by the decision of the Conservation Board, the Sile district of Istanbul has lost its tourism attractiveness for various reasons in recent years. Today, it has turned into a settlement where mostly authentic goods or replicas are randomly displayed, and daily tourism activities with low design value and space quality are experienced. The fact that the tourism process is not managed properly and the lifestyle of the society changes, causes the risk of abandoning the historical buildings in the region (OECD, 1994). For this reason, on-site observations and determinations show that there is a need for research on the creation of new policies that offer tourism-oriented solutions for Sile.

In the study, the socio-cultural and socio-economic structure is discussed in the entire Sile settlement. However, the detailed analysis part of the study was limited to Akcakese Village (Figure 5.2). Akcakese Village is located on the coast of Sile District, east of the centre of Sile, 13 km from the centre. Akcakese Village is the coastal village of Sile, with its unique street texture and historical rural architecture. The fact that the area is open to both pedestrian and vehicle use and that it contains many historical structures that should be seen from a touristic point of view can be said as other reasons in terms of rural tourism potential in the region. Akcakese is one of the villages where Sile cloth weaving and Sile cloth embroidery are made. Apart from these, the existing restoration projects of the buildings in the region and the necessary legal permission from the Municipality of Sile were also effective in the selection of this area. Akcakese Village has a climate type that shows a transition between the Black Sea climate and the Mediterranean climate, summers are hot and relatively dry, springs are warm and winters are cold. Akcakese is a village that lives in all four seasons. The summer months pass with stable temperatures not exceeding

30 degrees Celsius. It has a summer climate that is not overwhelming with its light wind. For this reason, Akcakese Village, with its coastline and sea, is flooded by tourists, especially in the summer months. The winter season in the village is not very harsh. The air temperature does not go down much to minus degrees Celsius. Autumn and spring months are the scenes of rainy and soft transitions. Due to its sea view, naturalness, and being close to the centre of Istanbul, it attracts great attention in other seasons, although not as much as in summer (Kozak and Evren, 1997).

Figure 5.2: Location of Akcakese Village

This study analyzes the factors that shape the rural architecture of Akcakese Village in terms of rural tourism.

5.5. Data Collection

Survey data was collected from stakeholders, which are tourists, residents, public officials, and tour organizers.

Two hundred and seventy-eight participants started the survey but only about 256 completed all sections. In the first part of the questionnaire, participants were asked to identify their demographic profiles. The demographic section of the survey consisted of four items, which included gender, age, education level, and occupation information. The data from the demographic section were gathered and displayed in the Table 5.1. In the second part, they were asked to evaluate rural architecture that

shapes sustainable tourism in the region. People were also asked to evaluate the criteria determined based on literature studies about sustainable rural architecture. Descriptive statistics were produced using the statistical package for the social sciences (SPSS). Based on all these studies, a questionnaire was prepared in which rural tourism criteria determined in the context of the study were compared with each other in pairs. SWOT criteria were evaluated by tourists, residents, public officials, and tour organizers with the pairwise comparison method.

Table 5.1: Demographic data: respondent's profile

Demographic variables		Frequency	Percentage (%)
Gender		256	100
	Female	129	50
	Male	122	48
	Nonbinary	5	2
Age		256	100
	18–30 years old	63	25
	31–40 years old	73	29
	41–50 years old	55	21
	51–60 years old	41	16
	61 years old and above	24	9
Education		256	100
	Primary School	20	8
	Secondary School	35	14
	High School	57	22
	Undergraduate	107	42
	Master's Degree	29	11
	Doctorate	8	3
Occupation		256	100
	Unemployed	59	23
	Employed	136	53
	Student	36	14
	Self-Employed	25	10

$N = 256$.

Visitors self-identified as 50% female, 48% male, and 2% nonbinary or other. Their education level was also identified as 8% primary school, 14% secondary school, 22% high school, 42% undergraduate, 11% master's degree, and 3% doctorate. %14 of visitors are students, %53 of them is employed, %10 of them is self-employed, and %23 of them have no job. It was understood that those who answered the questionnaire were mostly female, between the ages of 31–40, undergraduate and employed.

5.6. Findings from The Field Work

5.6.1. Rural architecture of Akcakese Village

The historical Akcakese Village, which is one of the most touristic areas of Sile, consists of original traditional buildings built at the end of the nineteenth century and the beginning of the twentieth century. It houses the structures that the villagers built with the materials they obtained from the nearest region, their own workforce, and

cultural values. These structures consist of single and twin houses, which are made of wood, stone, and mud brick and do not exceed three floors. The houses generally consist of two floors. While the lower floor is the floor where daily work is done, the main living area is the first floor. Apart from the two-story buildings in the village, there are also single-story and three-story structures.

Apart from the residential buildings, there are also ovens, haystacks, mosques, fountains, mortars, and tombs built with traditional methods. Almost all of the buildings in the village have gardens. The garden walls in the study area are surrounded by wooden fences. Similar typologies and slope were applied to the roofs. Different typologies are seen under the eaves, there are examples where the eaves are left open or closed.

5.6.2. Swot analysis of Akcakese Village

Based on previous studies in Turkey and worldwide, sustainable rural tourism criteria by definition, general characteristics, principles, and purposes of rural tourism were listed. In order to identify the sustainable rural tourism criteria according to this literature, Akcakese's historical, natural, and cultural values as well as elements causing a threat for the area were listed, and then a set of sustainable rural tourism criteria were set by consulting old regional government official (the mayor).

To explore the potential research areas, interviewees' statements were classified and analyzed through qualitative content analysis to extract the strategic factors of strengths, weaknesses, opportunities, and threats (SWOT). The objective of utilizing the AHP within the SWOT framework was to evaluate SWOT factors systematically and equate their intensities. In this context, seven strengths, eleven weaknesses, five opportunities, and five threats were listed as the SWOT analysis determined by the internal and external factors of Akcakese. SWOT analysis was created based on Akcakese Village's main and sub-rural tourism criteria.

- Strengths (S)

(1) It stands out more than other regions with its natural, cultural, especially historical values and refunctioning potentials (Figure 5.5).

(2) The density of buildings is less than in cities and other villages, and the buildings usually have gardens.

(3) The population is less compared to cities and other villages.

(4) Access to the area is easy by car.

(5) Traditional products (Sile cloth, tomato paste, jam, etc.) and production continues (Figure 5.3 and 5.4).

(6) There are historical monuments like traditional houses, mosque, bakeries, and tombs (Figure 5.5).

(7) Many of the historic buildings are still intact and reusable (Figure 5.5).

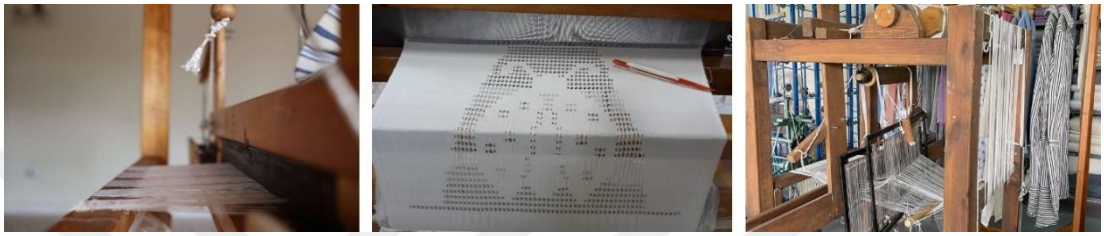


Figure 5.3: Handicraft Sile cloth

Figure 5.4: Traditional food

Figure 5.5: Positive SWOT criteria in Akcakese Village (left: S1, centre: S6, right: S7)

- Weaknesses (W)

(1) Accommodation and bed capacity are insufficient and not of the desired quality.

(2) The number of local businesses is insufficient.

(3) It is difficult to reach the area by public transport.

(4) Health, infrastructure and security services are insufficient.

(5) There are neglected, idle and partially destroyed structures (Figure 5.6).

(6) During the holidays, transportation becomes difficult due to traffic.

(7) The existence of unqualified buildings incompatible with the historical rural texture harms the original texture of the area.

(8) The promotion of the region and the marketing of the products of the region are not done sufficiently.

(9) Public spaces are insufficient and not of the desired quality.

(10) There is a large elderly local population.

(11) Social and cultural activities are not enough.

Figure 5.6: Negative SWOT criteria in Akcakese Village (left: W5, centre: T1, right: T4)

- Opportunities (O)

(1) Inactive architectural structures have the potential to be reused with touristic functions.

(2) It has historical and cultural assets where thematic tourism route proposals can be created that can revitalize the village.

(3) With the practical demonstration of Sile cloth looms to the tourists, Sile cloth weaving can be introduced to the tourists (Figure 5.3).

(4) The existence of the local population that can meet the employee needs that will arise from rural tourism.

(5) The village is not far from the city of Istanbul and is a good alternative for a tourism.

- Threats (T)

(1) Residents' and tourists' search for modern building comfort in traditional buildings and the additions that are created later in the buildings and do not consider the traditional architecture may cause the traditional buildings to begin to lose their identity (Figure 5.6).

(2) Neglect of buildings due to shareholder problems in the buildings

(3) Some of the local people are not aware of the value of the rural architectural heritage and do not make enough efforts to protect the structures.

(4) Damaged buildings threaten the security of the surrounding area (Figure 5.6).

In the questionnaire, all sustainable rural tourism criteria in the decision hierarchy were questioned under the main components of SWOT analysis to determine rural tourism potential of Akcakese (Table 5.2). There are some overlaps among SWOT factors between the four groups of stakeholders, since those factors were perceived as important and prevalent by both groups. However, differences can be seen in terms of the hierarchical order of those factors and their respective priority values. Table 5.2 presents SWOT factors with individual priority values for respondents. This also includes the factor priority of sub-criteria within each category.

Table 5.2: SWOT Criteria and Their Priority Scores

SWOT	Priority values of SWOT				Sub-criteria	Priority values of sub-criteria			
	Tourists	Residents	Public officials	Tour organizers		Tourists	Residents	Public officials	Tour organizers
Strengths (S)	0.321	0.310	0.302	0.287					
					S1	0.325	0.316	0.320	0.308
					S2	0.042	0.044	0.045	0.031
					S3	0.020	0.019	0.018	0.027
					S4	0.064	0.067	0.073	0.091
					S5	0.093	0.111	0.084	0.104
					S6	0.192	0.184	0.198	0.154
					S7	0.264	0.259	0.262	0.285
Weaknesses (W)	0.121	0.113	0.130	0.125					
					W1	0.045	0.032	0.047	0.039
					W2	0.032	0.041	0.036	0.045
					W3	0.146	0.142	0.134	0.163
					W4	0.162	0.146	0.139	0.114
					W5	0.140	0.175	0.140	0.145
					W6	0.031	0.032	0.027	0.031
					W7	0.080	0.075	0.093	0.069
					W8	0.146	0.135	0.114	0.180
					W9	0.051	0.047	0.056	0.061
					W10	0.032	0.051	0.046	0.022
					W11	0.135	0.124	0.168	0.131
Opportunities (O)	0.422	0.413	0.387	0.435					
					O1	0.487	0.518	0.512	0.470
					O2	0.234	0.211	0.187	0.247
					O3	0.120	0.087	0.123	0.110
					O4	0.046	0.032	0.054	0.042
					O5	0.113	0.152	0.124	0.131
Threats (T)	0.136	0.164	0.181	0.153					
					T1	0.310	0.289	0.277	0.296
					T2	0.142	0.176	0.170	0.168
					T3	0.261	0.230	0.252	0.245
					T4	0.287	0.305	0.301	0.291

Note: Underlined values display the highest values of each SWOT component according tourists, residents, public officials, and tour organizers.

The priority order of the main components of the SWOT analysis was selected as Opportunities, Strengths, Threats, and Weaknesses respectively for all stakeholders group (Table 5.2). According to the comparison results, Opportunities (O) were preferred as the most significant component among the main components of the SWOT analysis. On the other hand, the SWOT analysis's Weaknesses (W) component was preferred as the least significant component.

The combined positive priority value (strengths and opportunities) for tourists was 0.743, compared to the combined negative priority value (weaknesses and threats) of 0.257. The combined positive priority value for residents was 0.723, compared to the combined negative priority value of 0.277. The combined positive priority value for public officials was 0.689, compared to the combined negative priority value of 0.311. Lastly, the combined positive priority value for tour organizers was 0.722, compared to the combined negative priority value of 0.278.

5.7. Discussion

In this study, the criteria establishing the rural tourism potential of Akcakese were identified by evaluating the existing structures and environment and assessed using SWOT analysis. This SWOT analysis could have been better in establishing rural tourism priorities in the study area. Thus, SWOT analysis was quantified using the AHP method to be objective while making rural tourism-planning decisions. Therefore, the method used in this study is expected to provide guidance to future research and practice worldwide to detect sustainable rural tourism potential and planning decisions. Sustainable rural tourism policies to be developed for the future of the settlement can only be successful if the internal and external factors affecting the settlement are taken into consideration. Rural tourism development policies should provide insights on how to build strengths, maximize opportunities, reduce threats, and eliminate weaknesses.

It has been stated as the most important policy in the effective protection and re-evaluation of the historical and cultural heritage that it has (O1). Some abandoned architectural structures, whose main function and previous use are not for touristic purposes, have the potential to be refunctionalized with tourism functions (workshops, museums, exhibitions, cafes, restaurants, boutique hotels, etc.) to meet the demands of tourists who want to spend their holidays in Sile. In addition, structures that can be reused with the contemporary extension method have additional areas. In cases where traditional buildings are deemed insufficient in tourism purposes, it is recommended to add contemporary additional structures that are compatible with the traditional texture and contribute to the landscape, instead of applications that require major interventions. Depending on the location of the buildings in the parcel, different modern additions can be made. While some buildings are in the middle of the garden, others are on the street front (the garden is behind or next to the building). According to most respondents, Akcakese has historical and cultural assets that can be used to create thematic tourism route proposals that can revitalize the village, such as “Rediscover Sile Cloth” or “Architectural Heritage Travel Route”, which are experience-oriented in the context of sustainable rural tourism (O2). The fact that rural heritage routes provide sub-expansions in terms of various themes (creation of routes where thematic cultural and natural values can be experienced) will contribute to attracting the attention of all segments who want to have different experiences. There

is a need for informative and presentation tools and educational workshops for visitors of different ages on subjects such as rural life, handicrafts, village history, Sile cloth, traditional architecture, traditional agriculture, forestry, animal husbandry, nature conservation (O3). In particular, the use of new technologies should be encouraged to convey the past of the village.

Respecting the originality and integrity values of cultural assets and taking restoration decisions according to their weathering are a must when reusing the traditional structures and unique nature in Akcakese, which was built in line with the needs of the period (S1). As a result of the site analysis, it has been determined that some cultural assets that were not planned for touristic purposes could reuse with tourist functions and contemporary extensions, which is one of the contemporary practices to meet the demands of those who want to spend their holidays in Sile. Dozens of dysfunctional authentic houses could start operating to provide accommodation services. The old village buildings could restore and design as a museum or an experiential workshop where visitors can attend different workshops. Reuse of traditional buildings as shops can also be considered for sales units where local products specific to Akcakese Village can be sold (S5). It is recommended to preserve the traces of the historical period of the settlement and to develop informative presentation techniques about the settlement in rural tourism studies in the village, which can be visited as a nature and rural life museum after the refunctioning.

People who come from Istanbul and nearby cities for rural tourism or who have started to return to rural areas after retirement seek modern building comfort in traditional buildings, and the additions applied in buildings that do not take into account architecture cause traditional buildings to lose their identity (T1). It has been observed that the stairs, doors and windows that were added without considering the architecture as a result of the conversion of the two-storey buildings consisting of a single independent section into two units, each floor to be used separately, due to owner problems, damaged the structures and lost their originality to a large extent (T2). It is unthinkable to interfere with the area in line with today's demands for the plan and façade features that make up the original character of the traditional buildings that form a historical texture. The neglect, aging and disappearance of traditional environments formed by the accumulation of centuries creates a feeling of insecurity for tourism (T4). Precautions should be taken to prevent the damages caused by the structures that

pose a risk to human health. It is a necessity to prepare long-term education programmes for all segments of the society in order to protect the rural heritage (T3). In this context, the inclusion of courses on the preservation of historical, cultural, and natural heritage at all stages of the education system, starting with pre-school education institutions, will increase the sensitivity of future generations on conservation.

It is seen that the respondents expect their buildings to be made suitable for today's health conditions and to have infrastructure facilities such as electricity, water, sewerage, and internet during possible rural tourism works in Akcakese (W4). Creating a lively social and cultural environment is seen as one of the most important elements that will support the sustainability of rural tourism activities in the village (W11). In this respect, inviting the architecture and tourism faculties of universities to the village to carry out educational activities such as summer internships or workshops will ensure that the interest in the village is kept alive. Collaborations with universities in this direction will contribute to both the cultural environment of Akcakese Village and the educational processes of university students by evaluating the educational potential of the village. Providing public transportation services for the visitors and village people who want to come to the village is one of the steps to be taken in terms of the accessibility of the village (W3). In order to evaluate the potential of the village in terms of history and cultural tourism, the continuity of scientific research and practices for promotion, accessibility and presentation is of great importance (W8).

It is not possible to evaluate Akcakese's goals of preserving and transferring its cultural and natural heritage to the future, and of reviving and sustaining rural tourism independently of each other and from high-level policies and planning decisions.

5.8. Limitations

The present research has limitations. This study faced several limitations. Besides, the findings of this study are considered limited because it focuses on Akcakese Village alone. Future studies should include other villages that deteriorated in the world. Despite increasing academic and touristic attention on rural tourism, there is still considerable scope for future empirical research, predominantly qualitative in-depth studies of tourist motivation and experience. The high number of SWOT analysis criteria increased the pairwise comparison questions, creating difficulties in

participation in this survey. In this context, it would be useful to limit the SWOT analysis criteria by grouping them to reduce the number of questions in future studies.

5.9. Conclusion

Tourism is one of the most dynamic and fastest-growing global industries (Xiao and Smith, 2006). It has been recognized as an essential economic development tool generating revenue and employment for nations' economies (Goeldner and Ritchie, 2003). Many rural areas have reinvented their sustainable development through tourism, turning to vernacular heritage to ensure their future (Lane, 1994). Various heritage preservation and valorization models are adopted where small-scale agriculture is no longer viable. Rural architecture in rural communities can increase tourist visitation and help revitalize traditional cultural heritage through respectful creativity. So, this research has investigated the potential for rural tourism to help regenerate a declining historic village by utilizing rural architectural heritage. This case study has used a conceptual framework of current trends in rural renewal and cultural assets, as well as a combination of SWOT matrix and Analytic Hierarchy Process (AHP) approach to understanding the primary ways in which a declining rural destination can utilize its architectural heritage to regenerate physically, socially, and economically.

The study examines the rural architecture phenomenon, which is used by refunctioning with sustainable tourism. In this context, the research's main problem was how the region's tourism potential could be used more effectively and sustainably by preserving and refunctioning the historical and cultural structure. It is suggested that the region should be brought into tourism and developed locally, and that its architectural values should be preserved and transferred to future generations. This study argues that sustainable tourism reuses and contemporary additions can help sustainable rural development by attracting both tourists and investment.

It is expected that the outputs of this study will contribute to the tourism potential of rural areas and to the sustainable tourism action plan that central and local governments will prepare for rural living areas with cultural and historical value. This study, which determines the priority decisions to be taken by ensuring the participation of stakeholders in sustainable rural tourism planning, offers essential methods and findings for further rural tourism-planning studies for protected areas in Turkey and

other developing countries. It is possible to create proposals and policies that involve the local people, appeal to the local people and contribute to the production of the local people, both in the planning and implementation stages.

The opportunities of rural tourism potential of Akcakese should be considered as a priority in making the ecotourism-planning decision. The weaknesses of Akcakese should be developed to contribute to rural tourism potential in Sile. Creating sustainable rural tourism in villages with rich historical, cultural, and natural values such as Akcakese, whose number has been increasing in developing countries in recent years, is possible with a comprehensive policy transformation that will be carried out as a result of a multidisciplinary scientific study.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

The interrelated themes from the reviewed case studies underscore the nuanced complexities and multifaceted nature of conserving and reutilizing architectural heritage, particularly within urban and rural settings. These themes converge around preserving historical integrity, adapting structures to contemporary uses, and the broader socio-economic and cultural implications of such endeavors. The synthesis of findings from diverse contexts – from the industrial landscapes of Beykoz Leather and Shoe Factory and Santralistanbul to the rural setting of Akcakese Village – provides a holistic perspective on the challenges and opportunities inherent in the adaptive reuse of historic structures.

As mentioned in the introduction of this thesis, this study delves into the complexities of urban and rural revitalization, focusing on conservation and the adaptive reuse strategies for historical buildings, the integration of contemporary extensions, and revitalization and community engagement in urban and rural settings. The results of the case studies conducted within the scope of the study under these sub-headings are detailed below. In addition, the summarized results of the case studies in the thesis and the common results of these case studies are given in Table 6.1.

Conservation and Adaptive Reuse: The case studies illuminate the intricate process of conserving urban and rural heritage, which extends beyond the physical preservation of structures to encompass a broader spectrum of historical, cultural, and technological narratives. The adaptive reuse of such sites, as exemplified in the transformation of Beykoz Leather and Shoe Factory and Santralistanbul, is not merely a matter of architectural innovation but a complex interplay of memory, identity, and continuity. This process involves a delicate balance between maintaining the authenticity and integrity of the heritage while infusing new life and function into these spaces to meet contemporary needs and aspirations.

Furthermore, the studies emphasize the sustainability aspect of adaptive reuse, highlighting the environmental benefits of repurposing existing structures over

constructing new ones. This approach mitigates the environmental impact associated with construction and preserves the embodied energy and cultural significance of historical buildings.

Contemporary Extensions: As explored in the studies, the integration of contemporary extensions into historical settings presents unique architectural challenges and opportunities. The design of such extensions requires a thoughtful approach that respects the historical context while contributing to the structure's functionality and aesthetic appeal. The thesis highlights the importance of design elements – such as materiality, form, and scale – in mediating the relationship between old and new, ensuring that contemporary interventions complement rather than overshadow historical architecture.

Moreover, the studies underscore the importance of adhering to principles of authenticity and differentiation, as outlined in the Venice Charter, in contemporary extension projects. This involves creating a clear distinction between the original structure and new additions, thereby maintaining the historical building's integrity while enabling a dialogue between different architectural styles and epochs. The success of such interventions hinges on a nuanced understanding of the historical, cultural, and urban context, as well as a collaborative approach that engages architects, historians, conservationists, and the community.

Revitalization and Community Engagement: The adaptive reuse of structures, particularly in historical contexts, as discussed in the case studies, showcases the potential of heritage conservation to catalyze urban and rural revitalization and enhance community well-being. Repurposing historical buildings for tourism-related functions can provide a sustainable source of income, promote local crafts and traditions, and foster a sense of pride and belonging among community members. However, this requires a participatory approach involving local stakeholders in planning and decision-making to ensure that the development aligns with the community's needs and aspirations. By transforming underutilized or abandoned structures into vibrant cultural and economic hubs, adaptive reuse projects can serve as catalysts for revitalizing surrounding areas, attracting investment, and stimulating economies. This, in turn, can help counteract issues such as urban decay and socio-economic decline.

Table 6.1: Results of the Thesis

Title	Examination of Methods Employed in Industrial Archaeology Conservation: Case of Beykoz Leather and Shoe Factory	From Power Plant to Energy Museum: Spatial Perception of Santralistanbul	Visual Perception and Contextual Relationship of Contemporary Extensions and Historical Buildings	Examination of Rural Architecture That Shapes Sustainable Tourism in Emerging Economies Through Stakeholder Perspectives: Sile, Istanbul
Summarized Results	• The study assessed conservation methods in industrial archaeology, focusing on the Beykoz Leather and Shoe Factory. • It discussed the various approaches to preserving industrial buildings, highlighting the benefits of maintaining cultural and historical integrity through conservation efforts. • The research underscored the necessity of incorporating technical and cultural considerations in conservation strategies.	• The study focused on adaptive reuse and transforming the Silahtaraga Power Plant into the Santralistanbul Energy Museum. • It emphasized preserving industrial heritage through the museum and maintaining historical identity while introducing new technologies and uses. • Findings highlighted the importance of maintaining original architectural features while integrating modern functionalities to enhance educational and cultural value.	• This research explored the integration of contemporary architectural extensions with historical buildings, focusing on visual and contextual harmony. • Key findings were that successful contemporary extensions often employ harmonious design principles that respect the historical context and fabric without mimicking old structures. • The study advocated for adaptive reuse practices contributing to urban and cultural continuity.	• The paper examined how rural architecture influences sustainable tourism, using Sile, Istanbul, as a case study. • Findings indicated that preserving rural architecture could significantly enhance tourism appeal and economic sustainability in rural areas. • Emphasis was placed on stakeholder involvement and the adaptive reuse of architectural heritage to boost tourism.
Common Results	**Conservation of Historic Buildings:** All studies highlighted the significance of preserving historical and architectural integrity in the context of contemporary use and societal benefits. **Adaptive Reuse:** Emphasized across the papers is the adaptive reuse of buildings and spaces, which serves not only to preserve cultural heritage but also to revitalize and repurpose it for contemporary use. **Balancing Old and New:** Each study discusses the balance between maintaining original characteristics and integrating contemporary functionalities to ensure that the structures remain viable and relevant. **Community Engagement:** The importance of involving stakeholders in the planning and execution phases to align conservation efforts with community needs and expectations is a recurrent theme. **Cultural Continuity:** Emphasizing the role of architectural conservation in maintaining cultural continuity within communities, thereby strengthening local identity. **Technological Integration:** Integrating new technologies into historical settings to enhance visitor experience and building functionality without compromising the architectural essence is discussed.			

In conclusion, the collective insights from the case studies underscore the significant role of adaptive reuse and conservation in bridging the past and present, fostering sustainable development, and enriching communities' cultural and economic fabric. By embracing the complexities and opportunities inherent in these endeavors, we can ensure that historical structures continue to serve as vibrant and meaningful spaces in our contemporary landscapes, contributing to the well-being and resilience of urban and rural communities.

6.2. Recommendations

This thesis articulates extended and detailed recommendations for the conservation, adaptive reuse, and revitalization of historic buildings, drawing upon insights from four foundational studies that examine the interplay between historical preservation and urban and rural revitalization. The recommendations aim to provide a comprehensive roadmap for stakeholders engaged in conserving urban and rural architectures and promoting sustainable development practices while respecting and enhancing cultural heritage.

As mentioned in the introduction and conclusion of this thesis, the recommendation part focuses on these sub-headings: conservation, adaptive reuse and contemporary extensions, revitalization, and community engagement in urban and rural settings.

Conservation: Historic buildings serve as keystones in the urban fabric and rural landscapes, embodying historical, cultural, and aesthetic values. Integrating heritage conservation into broader urban and rural development plans is crucial, ensuring that these sites contribute to community vitality and ecological sustainability. Conservation efforts should embrace a holistic approach, considering the socio-economic, cultural, and environmental contexts. Urban planners and rural developers should work with conservationists to devise strategies that balance growth with preservation, ensuring that heritage sites are actively integrated into the community's life.

Sustainability should be a cornerstone of conservation practices, promoting the use of environmentally friendly materials and techniques that minimize the carbon footprint of heritage sites. This involves adopting renewable energy sources, enhancing energy efficiency, and utilizing locally sourced, sustainable materials. Conservation projects should strive to reduce water usage, manage waste effectively, and integrate green

spaces, contributing to the resilience and sustainability of urban and rural environments.

Also, comprehensive documentation of heritage sites and conservation practices is essential for preserving historical knowledge and informing future conservation efforts. This includes detailed architectural surveys, historical research, and documentation of traditional materials and techniques. Establishing digital archives and databases can facilitate access to this information for researchers, professionals, and the public, contributing to the collective knowledge base on heritage conservation.

Adaptive Reuse and Contemporary Extensions: Adaptive reuse and contemporary extensions require a creative approach to identifying new uses that respect the architectural integrity and historical value of the structures while meeting contemporary community needs. This may involve transforming urban historical sites into cultural hubs, educational facilities, and community centers or repurposing rural heritage buildings for tourism-related activities. Stakeholders should conduct thorough feasibility studies to ensure that proposed new uses are economically viable, socially beneficial, and culturally appropriate.

Architects and designers play a critical role in adaptive reuse, translating historical narratives into contemporary spaces that respect the past while embracing the future. It is essential to engage professionals who are experienced in working with historical structures and who understand the nuances of blending old and new. Design interventions should enhance the buildings' original character while providing for contemporary functionality, ensuring that adaptations are both respectful and innovative.

Revitalization: Heritage sites can catalyze economic development, mainly through cultural tourism. Developing the revitalization initiatives can attract visitors, generate revenue, and create employment opportunities, contributing to urban and rural areas. However, it is essential to develop sustainable revitalization strategies that respect cultural values and benefit local communities.

The conservation and adaptive reuse of heritage sites require significant financial resources. Encouraging private and public investment can provide the necessary funding for conservation projects and sustainable development initiatives. Governments can incentivize private investment through tax breaks, grants, and other

financial mechanisms while allocating public funds to support critical conservation work. Public-private partnerships can leverage the strengths and resources of both sectors, ensuring the long-term sustainability of heritage sites.

Community Engagement: The success of heritage conservation and adaptive reuse projects often hinges on the active involvement and support of the local community. Initiatives should be designed to foster community ownership, encouraging residents to participate in decision-making processes and engage in conservation efforts. This may involve organizing workshops, public consultations, and educational events that raise awareness of the value of heritage conservation and solicit community input and collaboration.

Building capacity and expertise in heritage conservation is necessary, ensuring that professionals and community members are equipped with the knowledge and skills required to undertake conservation projects. This involves providing training programs, workshops, and educational resources for architects, planners, conservationists, and local stakeholders. Universities and professional associations can play a pivotal role in developing specialized curricula and continuing education programs in heritage conservation.

Effective governance of heritage conservation projects requires the collaboration of multiple stakeholders, including government authorities, private sector entities, non-profit organizations, community groups, and cultural institutions. Establishing a multi-stakeholder governance structure can facilitate coordinated decision-making, resource allocation, and project implementation. This collaborative approach ensures that diverse perspectives are considered and conservation efforts are aligned with broader community interests and development goals.

Enhancing public awareness and appreciation of cultural heritage is fundamental to garnering support for conservation efforts. Initiatives such as heritage days, exhibitions, and educational campaigns can help to engage the public and raise awareness of the importance of preserving architectural heritage. Media campaigns, social media, and community outreach can further amplify the message, encouraging public engagement and support for conservation initiatives.

Also, sharing best practices and lessons learned from conservation projects worldwide can provide valuable insights and guidance for stakeholders involved in similar

initiatives. International conferences, workshops, and publications can serve as platforms for exchanging knowledge and experiences, fostering a global community of practice in heritage conservation. Networking and collaboration among heritage professionals can facilitate the dissemination of innovative ideas and successful strategies, contributing to the advancement of the field.

In conclusion, the detailed recommendations outlined in this thesis aim to provide a comprehensive framework for the sustainable conservation, adaptive reuse, and revitalization of architectural heritage. By addressing the multifaceted challenges and opportunities associated with heritage conservation, stakeholders can ensure that historical buildings and areas continue to enrich our urban and rural landscapes, serving as vibrant centers of community life, cultural expression, and sustainable development. Implementing these recommendations requires collaborative efforts among governments, professionals, communities, and international partners, fostering an integrated and holistic approach to preserving the architectural legacy for future generations.

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Endüstri Mirası Kapsamındaki Silo Yapılarının Yeniden Kullanımlarının İrdelenmesi ve Önerilerin Oluşturulması Scientific Research Project Supported by Higher Education Institutions (Researcher), 2023-

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D. PUBLICATIONS

Articles

Kurnaz, A. and Aniktar, S. (2024). Visual perception and contextual relationship of contemporary extensions and historical buildings. Journal of Architectural Conservation, 1-21. https://doi.org/10.1080/13556207.2024.2318923

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E. EDITORSHIP

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