

# ADAPTIVE REUSE OF HISTORIC STRUCTURES

**Matīss Kļava,  
Rudolfs Dainis Šmits**

Matīss Klava, MA student, Faculty of Architecture and Design, RISEBA University, Latvia.

Rudolfs Dainis Šmits, MATS Dipl. Arch, Faculty of Architecture and Design, RISEBA University, Latvia.

## ABSTRACT

Adaptive renovation of historical structures presents the dual challenge of preserving architectural heritage while accommodating contemporary urban needs. This research explores the transformation of spaces once designed for entirely different purposes, inhabited by different people, into relevant and functional parts of today's cities. The study investigates adaptive reuse strategies that integrate spatial functionality with historical integrity, offering insight into resource-efficient architectural practices.

The primary objective is to identify approaches that respect cultural and historical significance while addressing modern demands such as sustainability, aesthetics, and usability. The research also aims to bridge the gap between heritage conservation and contemporary architectural practice, reactivating neglected or abandoned structures.

There are strong theoretical references made before by architects, discussing the aesthetics of atmosphere and the passage of time. Some of the concepts emphasize the importance of spatial memory and historical layering, advocating for a design dialogue between old and new—where contemporary interventions amplify, rather than erase, the memories

embedded in architectural space.

The research addresses the following questions:

Spiritual dimensions: What renovation strategies can honor collective memory? How does adaptive reuse impact the social and spatial dynamics of a neighborhood? Technical dimensions: What are the main challenges and considerations in renovating historical buildings? What are the most effective methods and techniques for preservation? Contextual dimensions: What local preservation regulations influence adaptive reuse to meet urban development needs? What factors determine the success of an adaptive reuse project?

The study combines theoretical and practical approaches to merge historical aesthetics with modern architectural interventions. It includes case studies and comparative analysis, focusing on design tools and adaptive reuse strategies within broader urban contexts.

The research methodology involves qualitative analysis of spatial and aesthetic principles, and quantitative assessments of efficiency, sustainability, and user satisfaction. Methods include literature review, case study research, fieldwork, design simulations, and data interpretation.

The focal site of the study is located in the historic center of Kuldīga, Latvia, at Skolas Street 2. The ruins of a historical structure stand on this site, which holds significant spatial potential due to its central location. However, strict heritage regulations prohibit demolition, creating a design constraint that calls for creative and sensitive architectural intervention. This project serves as a case to explore how a new design can activate abandoned heritage while initiating a meaningful dialogue between preservation and innovation.

The following images 1,2,3 present conceptual visualizations of potential renovation outcomes for the historical site at Skolas iela 2 in Kuldīga. Generated using AI (Stable Diffusion), these architectural renderings serve as speculative design studies that explore a range of adaptive reuse strategies. Each scenario reflects a different degree of intervention—ranging from

minimal restoration to more expressive contemporary additions—based on key themes discussed in the research: spatial memory, material preservation, contextual integration, and atmosphere.

These simulations are not final proposals but rather analytical tools to evaluate how different design approaches align with theoretical principles and heritage values. By visualizing the potential dialogue between historical remains and modern architectural elements, the study examines which interventions best respect the cultural layers of the site while meeting contemporary functional needs.

The use of generative AI in this context enables the exploration of diverse possibilities and supports a comparative analysis grounded in architectural theory, user experience, and urban sensitivity.

In this context, the research highlights how adaptive reuse can act as a strategic architectural response that not only conserves physical heritage but also engages with deeper layers of spatial memory, cultural continuity, and social relevance. The thesis demonstrates that successful interventions depend on more than technical skill; they require sensitivity to atmosphere, narrative, and place identity. The use of varied design strategies such as minimal intervention, contrast, and hybridization allows for different levels of engagement with the historical fabric, ranging from subtle enhancement to bold reinterpretation. Comparative case studies, including works by Scarpa, Bricolo & Falsarella, and the adaptive reuse of Nervi's hangar, provide evidence of how layered design decisions can transform decaying or obsolete structures into active, meaningful parts of the city. The Riga Charter is used as a conceptual framework to underline the ethical responsibilities architects face when intervening in heritage contexts. Ultimately, the project suggests that adaptive reuse is not only about preservation—it is also about reactivating space for future use, fostering continuity while embracing transformation. By combining historical depth with contemporary relevance, adaptive reuse can offer a sustainable and poetic

way forward for urban environments rooted in their own layered histories.



Figure 1. Stable Diffusion studies



Figure 2. Stable Diffusion studies.



Figure 3. Stable Diffusion studies.

## KEYWORDS

Adaptive renovation, cultural heritage, urban contexts, historic structures, spatial memory

## 1. INTRODUCTION

From the perspective of architecture in many European towns and cities, layers of history show in the built urban environment, in a lot of cases manifesting the scars of history, buildings as monuments that live through the centuries and in a way link the generations, outlasting more than an average human can. Strongly saying that history carries weight, life still goes on, and the main thing is the present and the future still. The historical structures that no

longer serve their original intention are a standing opportunity that can give benefits for a lot of sides involved within a project being transformed once again into meaningful, usable spaces while respecting what they once were and the surroundings.

While serving as a philosophical base and the poetic as it is, the urban growth and shifting social and living needs demands new uses, forms and spaces, and inevitable as it is if the building are born to be in the central locations it will have to adapt to all of these aspects and serve as a shell for the new and rather than viewing the constraints as a limitations, should be seen as catalyst base for new design and spatial explorations.

For the thesis itself, the exploration can be twofold: first, it investigates the reuse strategies engaging with the historical structure, emotional, and spatial legacy; second, it is the field that pays attention to the themes, such as atmosphere, as a contemporary intervention that enhances what has been inherited.

Research poses the following central questions:

How can architectural renovation honor the collective memory embedded in historic structures? What are the most effective design strategies to mediate historical preservation with contemporary functionality? How can adaptive reuse influence social and spatial dynamics within an urban neighborhood?

As these questions speak a lot about the broader sense of the place, it is necessary to understand how the place works to get the research contextually grounded. But does the use need to be grounded? There are things that are needed for the city and things that can be borrowed for a new means.

## **2. DESIGN STRATEGIES FOR REUSE**

### **PROJECTS**

The design process that involves a historical structure should embed a design philosophy of sensitivity to more than just stones, bricks, and mortar. While almost every historical building presents its own challenges, preset design

strategies can guide to a clear and intentional outcome.

The minimal intervention strategy embraces the idea of preserving as found, and it aims to retain as much of the existing structure and material as possible, emphasizing the passage of time, decay, rust, and other layers. Interventions are discreet and reversible and do not conflict with the atmosphere.

In the conservation of historic buildings, maintaining architectural integrity is essential. This involves preserving original design elements, structural systems, and materials to uphold the building's historical authenticity. Restoration efforts should be grounded in thorough research and guided by a respect for the building's original condition, avoiding interventions that could compromise its character through excessive modernization. Additionally, preservation must consider the broader urban context, ensuring that interventions harmonize with the surrounding environment. From a sustainable development perspective, conservation should not be limited to maintaining physical form, but also address how these structures can be adaptively reused to meet contemporary needs—such as housing, public services, or cultural functions. With thoughtful renewal strategies, heritage buildings can be reintegrated into the dynamic fabric of urban life, rather than remaining static relics of the past. (Ma 2025) Where the minimal intervention refrains, contrast speaks strongly. The contrasts introduce clearly contemporary forms (Figure 4), yet in the historic fabric, they aim to enter the dialogue. For the case study, Filippo Bricolo and Bricolo Falsarella Associates completed the previously unfinished East Wing of the Castelvecchio Museum by introducing a new Mosaic Room designed to house a second-century Roman floor fragment. The intervention features refined architectural elements—such as a thin iron panel and a sculptural archway—that create a layered spatial transition and emphasize Scarpa's legacy through contemporary interpretation. With exposed brick, reflective surfaces, and carefully curated lighting, the design establishes a meaningful dialogue between historical memory and modern

architectural expression. (Bricolo and Falsarella, 2017)

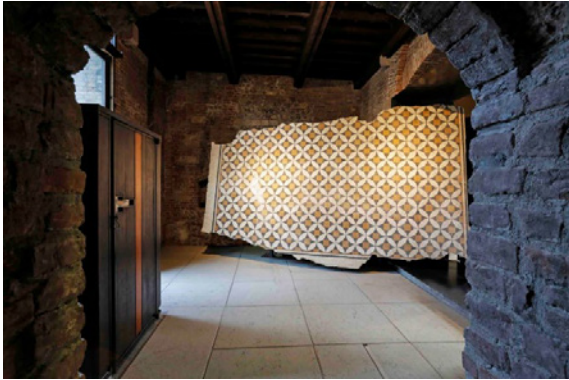


Figure 4. Design intervention in case study project- Castelvecchio Museum – The East Wing / Filippo Bricolo & Bricolo Falsarella Associates (Bricolo and Falsarella 2017)

A middle way between the previously mentioned approaches can be called hybridization. This approach blends the new and old more fluently. It integrates new volumes or spatial programs into existing structures, using complementary materials and forms. Rather than emphasizing contrast or erasure, it suggests continuity—a kind of architectural grafting.

As cities and urban environments evolve, many architectural complexes and areas have undergone transformation, shedding obsolete functions in favor of new ones. This shift has led to increased interest in hybridizing land use—not only within urban planning, but also in the adaptive reuse of historical buildings. One such example is the adaptive reuse of Pier Luigi Nervi's 1938 prefabricated concrete hangar in Salerno, Italy, where a hybridization strategy seeks to preserve both the cultural and technological value of the structure while introducing contemporary cultural functions. Balancing the building's military past with new public uses, the project exemplifies how architectural hybridization can serve as a means of revitalizing heritage sites in response to current societal needs. This interdisciplinary case highlights the potential of such strategies to ensure the meaningful continuity of historic landmarks. (Cucco, Neri, and Ribera 2024)

### 3. LOCAL THEORY OF AUTHENTICITY AND HISTORICAL RECONSTRUCTION

Through the recent history the international charters have played a pivotal role in shaping the ethical and methodological foundations of heritage conservation. Documents such as the Venice Charter (1964), the Nara Document on Authenticity (1994), and the Burra Charter (1979) have educated the understanding of authenticity, historical value, and appropriate intervention.

The Riga Charter (2000) outlines the ethical framework for the reconstruction of cultural heritage, emphasizing that authenticity must be preserved through minimal and carefully justified intervention. It argues that reconstruction should only be undertaken when essential for the survival or understanding of a site and must be based on verifiable documentation, avoiding conjecture or falsification of historical context. The charter stresses that conservation efforts should prioritize maintenance and repair over replication, supporting the idea that new architecture should reflect its own time rather than mimic the past. Ultimately, the Riga Charter positions reconstruction not as a default solution, but as a carefully limited act that must respect existing heritage fabric, historical integrity, and community involvement. (Riga Charter 2000)

#### 4. REFERENCE LIST

1. Ma, Wenqin. 2025. "Urban Memory and Identity: Exploring the Social Significance of Preservation of Historic Buildings." \*SHS Web of Conferences\* 213: 02040. <https://doi.org/10.1051/shsconf/202521302040>.
2. Bricolo, Filippo, Francesca Falsarella. 2017. "Castelvecchio Museum – The East Wing / Filippo Bricolo & Bricolo Falsarella Associates." ArchDaily, March 1, 2017. Accessed June 19, 2025. <https://www.archdaily.com/806246/castelvecchio-museum-nil-the-east-wing-filippo-bricolo-and-bricolo-falsarella-associates>.
3. Cucco, Pasquale, Giulia Neri, and Federica Ribera. 2024. "Adaptive Reuse of Modern Heritage for Cultural Purpose: Hybridization Strategies in Pier Luigi Nervi Hangar, Italy." \*VITRUVIO – International Journal of Architectural Technology and Sustainability\* 9 (1): 22–43. <https://doi.org/10.4995/vitruvio-ijats.2024.21482>.
4. Riga Charter. 2000. \*Riga Charter on Authenticity and Historical Reconstruction in Relationship to Cultural Heritage\*. ICCROM, Latvian National Commission for UNESCO, and State Inspection for Heritage Protection of Latvia. Riga, Latvia, October 23–24, 2000.