



Adaptive Reuse as Potential Spaces: Shopping Malls – The Case of Ankara

Mete SEZER^{1,*}, İdil AYÇAM²

¹ 0009-0006-6141-9851, Gazi University Graduate School of Natural and Applied Sciences, Department of Architecture, Maltepe, Ankara

² 0000-0001-7170-5436, Gazi University, Faculty of Architecture, Department of Architecture, Maltepe, Ankara

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Abstract

It is considered that shopping malls (SMs) will become obsolete in the future due to various reasons, primarily the development of technology and the shift in shopping habits towards online shopping. In this case, the reuse of these structures, which have not yet completed their useful life, by converting them holds many economic, social, and environmental potentials. The purpose of this research is to determine the SM with the highest potential to be reintegrated into urban life with adaptive reuse (AR) strategies instead of demolition in the event that Ankara's SMs become idle in the future. Semi-structured qualitative interviews were conducted with 25 different experts operating in Ankara on AR and SM issues through the SM cards created for SMs in Ankara (29 SM cards in total); as a result of these interviews and literature review, the framework of the subject was drawn; subject titles and sub-titles (themes) were created; and the most suitable SM was identified with the highest potential for transformation. The study reveals that urban memory plays a pivotal role in evaluating reuse potential, with community attachment to historical structures significantly influencing project viability. Findings indicate mixed-use conversions consistently outperform single-function adaptations, offering greater economic and social benefits through diversified programming. Centrally located malls with historical significance emerge as prime candidates for adaptive reuse, given their inherent advantages in accessibility and cultural value. Crucially, the research underscores architectural expertise as the cornerstone of successful adaptive reuse, requiring careful balance between preservation and innovation.

1. INTRODUCTION

The concept of environmental consciousness and sustainability began to significantly permeate society, the economy, and the field of architecture following the 1979 oil crisis. Alongside technical aspects such as resource conservation, energy efficiency, and waste management, approaches began to emerge that addressed the built environment through educational, cultural, and social dimensions. The concepts and practices of “green buildings” and “sustainable architecture” have started to be considered not only in the design of new buildings but also in the process of enhancing the functionality of existing structures [13]. [14]. The three pillars of sustainability are defined by the “3Rs”: reduce, reuse, and recycle. A key subcomponent of these principles, “reuse,” emerges in architecture as the concept of “adaptive reuse” (AR). Through the application of AR design principles, existing buildings can be refunctionalized to meet contemporary needs while preserving various values and avoiding demolition.

In addition to its environmental benefits, adaptive reuse contributes to the reduction of economic costs [1],[2]. By enabling efficient use of economic resources, it plays a strategic role in achieving sustainability goals. Revitalizing abandoned or underused buildings provides long-term benefits both economically and environmentally, while also contributing to the preservation of cultural heritage.

Economic analyses by Kincaid [1] and Christensen [2] demonstrate that AR projects offer cost advantages in both the short and long term. Moreover, AR ensures the protection of buildings' historical and cultural values within their urban contexts. In this regard, it serves as a strategic approach that transfers the heritage of the past to future generations and provides a holistic perspective on urban

* Corresponding author: metesezer@gmail.com

transformation processes [3],[4]. The use of classical buildings for new functions during the Renaissance and the conversion of religious buildings into industrial or military facilities after the French Revolution indicate the historical roots of AR [5],[6]. As stated by Giresun and Tönük [7], the renewal of vacant buildings through AR is not only a technical necessity for ensuring the sustainability of the existing building stock, but also a cultural and social imperative. Thus, AR should be considered as a comprehensive strategy. As emphasized by Underhill [3] and Arnheim [4], it is crucial to implement architectural interventions that meet the demands of contemporary life while preserving the original texture of historical buildings during AR processes.

As demonstrated by researchers such as Powell [8] and Robert [9], historical examples of buildings being repurposed to meet different needs also serve as sources of inspiration for contemporary practices. Approaches advanced by Plevvoets & Van Cleempoel [10] and Robert [9] highlight AR's contribution to socio-cultural sustainability and underline its potential as a mechanism for social transformation.

In the contemporary era, digital transformation, globalization, and shifting consumption habits have profoundly reshaped the retail sector and, consequently, the construction industry. The rapid rise of online (e-) commerce has diminished the functionality of physical retail spaces, causing shopping malls (SMs) to fall into disuse. For instance, in the United States, new SM projects are no longer being developed, and existing idle malls are being refunctionalized through AR [11]. In Turkey, it is reported that at least 3 million square meters of mall space face the risk of becoming obsolete [12]. In this context, AR emerges as a beneficial approach for reintegrating these disused areas into urban life and incorporating them into urban transformation processes.

Scharoun [11] notes that through AR, SMs can be redefined with new cultural, social, and economic functions, thereby extending the lifespan of buildings and enhancing their contribution to urban vitality. In Turkey, existing mall spaces hold the potential to be aligned with both environmental and economic sustainability principles [12]. In a rapidly urbanizing city such as Ankara, the adaptive reuse of existing SMs is of great significance. While new construction projects associated with urbanization processes often lead to environmental degradation and loss, AR enables the preservation of various values in existing structures while addressing contemporary demands.

This study aims to examine how existing SMs in a city like Ankara—where rapid urbanization is highly evident—can be refunctionalized through AR, while addressing the environmental, economic, cultural, and social dimensions of this transformation through a holistic approach. Implementing AR strategies in evaluating the current mall stock is expected to contribute to urban transformation processes with a scientific basis and offer innovative solutions within the scope of sustainable architectural practices. In this regard, the theoretical frameworks and practical examples discussed in this study aim to demonstrate how sustainable urban living can be supported through the adaptation of existing SMs. The results obtained will shed light on both the academic literature and practical applications in the field.

2. METHOD

The central hypothesis of this research is that abandoned or underutilized shopping malls (SMs) can be transformed into functional and beneficial structures through the principles of adaptive reuse (AR). Shaped by the philosophy of sustainability, rational architectural design approaches and AR practices make it possible to convert shopping malls—symbols of consumer culture—into urban and even green public spaces.

To test this hypothesis, 29 “SM cards” were created by compiling plans, sections, urban context data, and technical information related to shopping malls in Ankara. Based on these cards, semi-structured interviews were conducted with 25 participants, consisting of experienced architects and urban planners based in Ankara.

In the first phase of the interviews, participants were asked to share their views on the advantages and disadvantages of AR compared to the demolition–reconstruction approach. In the second phase, they were

asked to select five malls from the SM cards and rank them according to their transformation potential (with scores of 5, 4, 3, 2, and 1 assigned based on order of selection). In the final phase, participants were requested to fill out forms suggesting possible architectural programs for the top three malls they had selected.

All interviews were audio-recorded and archived to be used in subsequent stages of the analysis.

3. RESULTS AND DISCUSSION

The findings and discussion are addressed in two sections. The first section presents and discusses the participants' views on the subcategories of adaptive reuse (AR). The second section presents and discusses the participants' evaluations of shopping malls in Ankara in terms of their AR potential.

3.1.Evaluation of Participants' Views on AR Subcategories

Within the scope of the study, participants were asked to score the benefits of AR across economic, social, environmental, administrative, and physical dimensions on a scale from 1 to 9. The data obtained from this evaluation are presented in Table 1. According to the table, the average score for economic benefits was 7.16; for social benefits, 7.16; for environmental benefits, 7.92; for administrative benefits, 4.56; and for physical benefits, 4.92. These averages indicate that participants perceive AR to be most beneficial in environmental terms, followed by economic and social benefits.

Table 1. Average Scores of AR Benefits by Economic, Social, Environmental, Administrative, and Physical Dimensions

	Average Points
Economic	7,16
Social	7,16
Environmental	7,92
Administrative	4,56
Physical	4,92

Within the scope of the research, semi-structured interviews were conducted with participants to examine the benefits of AR in economic, social, environmental, administrative, and physical dimensions in detail. As a result of the interviews, 25 different audio recordings were transcribed and thematic analysis was performed. With the analyses, themes were obtained according to the most emphasized features of adaptive reuse (Table 2).

Table 2. Distribution of Themes of AR Benefits in Economic, Social, Environmental, Administrative, and Physical Aspects

AR	Themes
Economic Aspect	Cost Advantage Construction Time Sustainable Investment Rent Control
Social Aspect	Urban Memory Social Space Need Changing Habits
Environmental Aspect	Carbon Footprint Efficient Use of Resources Waste Problem
Administrative Aspect	Regulation Problems Planning Deficiency Investor Awareness Role of Public Institutions

Physical Aspect	Structural Constraints Structural Advantages Technical Difficulties Adaptation to Urban Context Functional Diversity and Social Complexity
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3.1.1. Economic Aspects of Adaptive Reuse

The economy heading was the most emphasized topic by the participants in the interviews conducted within the scope of the research. Participants expressed extensive opinions on the fact that the budget issue will inevitably confront project stakeholders in a real transformation project for various reasons. In line with the data obtained from the interviews, AR in terms of economy; It is grouped under four themes: cost advantage, construction time, sustainable investment, and rent control.

Cost Advantage: Participants stated that AR is more economical than demolishing and rebuilding an existing structure for various reasons. In this context, participants emphasized that the use of existing building stock's solid foundations and load-bearing systems, and the absence of additional costs (demolition waste disposal, transportation, labor, etc.) resulting from demolition provides a cost advantage. In addition, the easier bureaucratic processes such as obtaining a new license were also mentioned among the economic advantages by some participants.

Construction Time: Under this theme, participants stated that the total construction time is shortened with AR since there is no need for excavation and structural work stages. Considering that the structural work generally constitutes 30%-40% of the total construction, it can be predicted that the total construction production process will decrease by 30%-40% as a result of AR.

Sustainable Investment: Participants emphasized that the transformation process provides long-term sustainability by reducing the resource consumption and environmental impact caused by demolition. They stated that this situation is a more beneficial approach both environmentally and economically.

Rent Control: Under this theme, participants emphasized that Adaptive Reuse (AR) could reduce pressures related to rent increases following demolitions and alleviate burdens on local governments. They highlighted that this could shift planning processes to a more ethical and sustainable foundation. In our country, one of the motivations for demolishing and rebuilding structures is to increase construction area for greater profit. The Urban Transformation Law, created to address Turkey's seismic reality and improve our insufficiently resilient building stock, has ironically turned the demolition and reconstruction of buildings into a new rent-seeking opportunity. Consequently, demolishing and rebuilding under the law, rather than transforming existing structures, often provides investors with larger square footage and profits in many cases. This situation reduces the feasibility of transformation compared to demolition and reconstruction. In city centers, high-density mega projects that could be considered urban crimes have emerged. To increase the viability of AR, decision-makers should establish strict rules regarding density bonuses or even reduce them, which could help solve the problem.

3.1.2. Social Aspects of Adaptive Reuse

The social aspect was the second most frequently mentioned topic in interviews (150+ mentions). There is strong support for AR in this context as well, and when approached from a social perspective, AR is seen as extremely advantageous compared to demolition and reconstruction. Based on interview data, the social benefits of AR are grouped under three themes:

Urban Memory: Participants stressed that AR is crucial for preserving urban memory and maintaining connections with the past, particularly for historically and culturally significant buildings. They stated that transformation should be preferred over demolition to protect historical fabric and prevent cultural damage. Over time, buildings become part of the city and ingrained in society's urban memory. Some structures may even become inseparable parts of the city due to their longevity and location. In such

cases, demolishing and replacing them may upset residents. With AR, buildings embedded in urban memory remain intact. Their identity, cultural value, place in collective memory, and meaning in the city continue to exist. Derelict buildings are "treated" through architecture and reintegrated into urban life, strengthening ties with the past.

Need for Social Spaces: Participants pointed out that limited spaces for socialization in cities and the comfortable, secure, air-conditioned environments of shopping malls have made malls fulfill social needs. They noted that mall transformation processes should consider society's need for social spaces. People have satisfied their socialization needs since the dawn of civilization, starting from their private homes to semi-private and public spaces. These public spaces have traditionally included streets, avenues, and squares—various sub-spaces of the city.

Looking at Ankara, the focus of this research:

- Ankara has a challenging climate—very hot in summer and very cold in winter. People seek warm spaces in winter and air-conditioned spaces in summer for socialization.
- Ankara lacks natural guiding features like a coastline or river that could serve as urban focal points. The city is dispersed, and spaces for socialization are more limited compared to coastal cities.

Due to these two main reasons, malls in Ankara are seen not only as shopping centers but also as socialization hubs and, increasingly, as "life centers," as reflected in recent mall names. These spaces, protected from the climate (cool in summer, warm in winter), with free parking, baby care rooms, well-maintained restrooms, and security, function as next-generation urban centers for Ankara residents. From shoppers to those browsing or passing time, diverse groups frequent these spaces. Thus, as participants noted, considering social space needs during mall transformation is essential.

Changing Habits: Participants stated that with the rise of e-commerce, there is widespread anticipation that malls will lose their function as shopping centers and transform into new uses. They mentioned that malls could adapt to functions like logistics hubs, cultural centers, or educational facilities. In this transformation process, they emphasized the importance of societal preferences, property owners, and administrative institutions, as well as the need to preserve buildings that have left a mark on urban memory. Participants also noted that since malls are products of consumerist culture and shape consumption habits, their transformation could contribute to developing more conscious consumption. They suggested that this transformation could alter consumption patterns and support more sustainable models.

3.1.3.Environmental (Ecological) Aspects of Adaptive Reuse

Environmental/ecological issues were the third most discussed topic (100+ mentions). When viewed from an environmental perspective, AR is seen as highly advantageous compared to demolition and reconstruction. All interviewees agreed that the less humans interfere with the environment, the more ecological it remains. Based on interview data, the environmental benefits of AR are grouped under three themes:

Carbon Footprint: Participants reported that transforming malls through AR would cause less environmental harm by reducing carbon emissions and greenhouse gases associated with demolition. They also emphasized that minimizing the use of non-recyclable materials like reinforced concrete during transformation could contribute to sustainable construction practices. The carbon footprint measures a structure's environmental impact in terms of greenhouse gas emissions, starting from excavation and continuing throughout its lifespan. AR eliminates the carbon footprint from demolition and rough construction phases. With good design, the new version of the building can further reduce its previous carbon footprint through material choices.

Efficient Use of Resources: Participants stated that AR reduces the need for new material production, enabling more efficient use of natural resources. They highlighted that this limits material consumption and supports sustainable construction models. Buildings that avoid demolition and rough construction

phases do not require new concrete, steel, glass, or other construction materials, conserving natural resources like energy and water.

Waste Problem: Under this theme, participants pointed out the rubble problem and high disposal costs associated with demolition, noting that AR eliminates these issues. They reported that AR reduces environmental pollution and resource waste, supporting a sustainable approach. When a building is demolished and rebuilt, valuable materials are salvaged, but nearly the entire old structure becomes waste. With AR, no demolition waste, rubble, or harmful gases are produced since excavation and rough construction are avoided.

3.1.4. Administrative Aspects of Adaptive Reuse

Administrative issues were not seen as highly significant in interviews. Some participants believed AR is administratively advantageous, while others argued the opposite. Based on interview data, administrative aspects of AR are grouped under four themes:

Regulatory Problems: Participants reported that incomplete archives of old projects and constantly changing regulations create serious challenges for AR projects. These issues can delay processes and increase costs. With each regulatory update, older buildings fail to meet new requirements. Over time, buildings may comply with almost none of the current regulations, from density calculations to fire safety, thermal insulation, and more. Sometimes, under new plans, a building may fall outside required setbacks or even its own lot. In some cases, the existing square footage or number of units may not meet new standards. AR exempts architects/investors from this regulatory vortex, as noted by some participants.

Planning Deficiencies: Participants noted that malls were originally built without adequate consideration for urban planning and transportation, causing problems during transformation.

Investor Awareness: Participants stated that malls were built with a profit-driven mindset, and investors often neglect urban/social benefits during transformation. Investors are expected to have some urban consciousness and adopt a more flexible approach, especially regarding rental expectations, to make AR viable.

Role of Public Institutions: Participants emphasized that municipalities and public institutions should actively guide AR to align with societal and urban needs. Since mall locations, sizes, and openings are regulated by municipalities and commercial entities, raising awareness about AR among these institutions, offering incentives, economic support, and new models (e.g., mandatory 5% library or museum spaces in malls) could significantly advance transformation.

3.1.5. Physical Aspects of Adaptive Reuse

When examined physically, AR has both advantages and disadvantages compared to demolition and reconstruction. Based on interview data, physical aspects of AR are grouped under five themes:

Structural Constraints (Physical Dimensions, Natural Light, and Ventilation): Participants noted that AR may limit design freedom due to existing structural elements, making adaptation to new functions challenging. Issues like floor height and spans may hinder new programming. Malls' deep plans and enclosed spaces often lack natural light and ventilation, requiring solutions during transformation.

Structural Advantages: Participants highlighted existing security systems, transportation/parking infrastructure, service facilities, and amenities (e.g., restrooms, prayer rooms) as advantages that can be retained in AR. While debates continue about whether malls—with X-ray screenings at entrances—qualify as urban spaces, their perceived safety (e.g., security guards, cameras) attracts visitors. In Ankara, malls with metro access are most preferred. Existing accessibility and parking (sometimes thousands of spaces) greatly facilitate successful AR.

Technical Challenges: Participants addressed difficulties in updating outdated electrical, plumbing, HVAC systems, and load-bearing structures that may have degraded over time, requiring thorough analysis and reinforcement.

Integration with Urban Context: Participants stressed that malls' large, dominant scale must be carefully reconsidered during AR to ensure harmony with urban fabric and surroundings.

Functional Diversity and Social Mix: Many participants advocated reducing commercial space in favor of civic/cultural uses (e.g., libraries, parks) and designing transitional zones for comfort. Malls already simulate urban environments but should do so more authentically. Successful malls periodically renew tenant mixes and activities to stay relevant. Urban design experts emphasized the importance of "intermediate zone design" for user comfort.

3.2 Evaluation of Participants' Perspectives on The Adaptive Reuse Potential of Shopping Malls in Ankara

The second phase of the research aimed to identify the adaptive reuse (AR) potential of shopping malls in Ankara. Participants were provided with 29 pre-prepared mall profile cards and asked to evaluate five malls of their choice based on transformation potential. They were instructed to make selections assuming all malls had become functionally obsolete. Participants ranked their five selections by transformation priority, assigning 5 points to the highest priority, down to 1 point for the fifth. The scoring results are presented in Table 3.

Table 3. Distribution of AR Potential Scores for Shopping Malls in Ankara

SM	Total Points	Votes Received
Karum SM	99	24
Kızılay SM	61	15
Atakule SM	42	12
ATG SM	27	9
Next Level SM	22	10
365 SM	12	6
One Tower SM	12	5
Bilkent SM	11	4
Kentpark SM	11	4
Armada SM	10	5
Ankamall SM	8	3
Cepa SM	8	4
Panora SM	8	3
Nata Vega SM	8	3
Metromall SM	7	2
Kuzu Effect SM	7	4
Atlantis SM	5	2
FTZ SM	3	2
Göksu SM	3	1
Gordion SM	3	3
Taurus SM	3	1
Anatolium SM	2	1
Arcadium SM	0	0
Optimum SM	0	0
Forum SM	0	0

Antares SM	0	0
A City SM	0	0
Podium SM	0	0
Vega S. SM	0	0

In subsequent evaluation, participants scored each mall's suitability (1-9 scale) for conversion to specific building typologies, where 9 indicated optimal compatibility and 1 complete incompatibility.

The typologies evaluated were:

- Urban/cultural facility
- Administrative institution
- Healthcare/educational facility
- Hospitality
- Office/commercial
- Residential
- Mixed-use
- Participant-suggested alternative use

Karum Shopping Mall emerged as the clear leader in both vote count and total points. As one of Ankara's first shopping malls, its central location, frequent usage, and prominent place in collective memory make it a significant urban landmark. Its iconic association with the adjacent Sheraton Hotel Tower further enhances its cultural value. Of 25 participants, 24 identified it as the highest-priority conversion candidate, awarding it 99 total points - a substantial lead over other malls. These results confirm Karum Shopping Mall's status as a cherished urban asset.

Regarding functional conversion, urban/cultural or mixed-use received the highest average score (8/9), followed by office conversion. Residential conversion was deemed particularly unsuitable (lowest scores), reinforcing participants' perception of its cultural significance. The mall's strong association with urban identity suggests it has effectively become part of the city's essence.

4. CONCLUSION

The adaptive reuse of functionally obsolete shopping malls presents environmental, urban, cultural, social, and economic benefits. While investors and institutions hold decision-making authority, architects will play pivotal roles in ensuring successful transformations that enhance urban value.

In Ankara, Karum Shopping Mall demonstrates the highest conversion potential. As an established urban landmark, it is perceived as a valuable civic asset. While various reuse options were proposed, mixed-use conversion emerged as the optimal strategy. For large-format retail structures, functional diversification - rather than single-use conversion - appears most effective for extending building lifespans.

Key findings:

1. Urban memory significantly influences reuse potential evaluations
2. Mixed-use adaptations are preferred over single-function conversions
3. Centrally located, historically significant malls have highest conversion priority
4. Architectural teams are crucial for realizing quality adaptive reuse projects

This research provides a methodological framework for evaluating reuse potential that can be applied to other retail structures in transition.

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