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Adaptive Reuse Financial Strategies: Converting Underutilized Commercial Properties into Affordable Housing

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Abstract

This paper explores the potential of adaptive reuse as a sustainable and economically viable solution to the growing shortage of affordable housing in urban areas. Focusing on the conversion of underutilized commercial properties into affordable housing, the study highlights the financial, legal, social, and environmental aspects of adaptive reuse projects. The paper discusses various financial strategies, including cost estimation, capital investment, and financing mechanisms such as tax incentives and public-private partnerships, which enhance the feasibility of these projects. It further examines the legal and regulatory challenges, including zoning laws and building code compliance, and how they can be navigated to ensure successful conversion. Socially, adaptive reuse offers significant benefits by promoting mixed-income neighborhoods and reducing gentrification risks, while environmentally, it contributes to sustainability by minimizing waste and reducing the carbon footprint. The paper concludes with future policy and practice recommendations, including expanded financial incentives, streamlined zoning regulations, and further research into sustainable financing models. Ultimately, adaptive reuse is positioned as a critical strategy in urban regeneration, offering a pathway to both affordable housing and long-term community development.

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1. Introduction

1.1 Overview of Adaptive Reuse and Affordable Housing

Adaptive reuse refers to the process of repurposing existing structures, typically commercial or industrial buildings, for new functions that suit contemporary needs. In the context of urban development, adaptive reuse has gained significant attention as a sustainable and cost-effective approach to revitalizing aging properties ^[1]. As cities face increasing pressure to accommodate growing populations, adaptive reuse provides a practical solution to transform underutilized commercial buildings into functional, livable spaces. By retaining the structural integrity of these properties, adaptive reuse conserves resources, reduces construction waste, and supports sustainable development goals ^[2].

In recent years, converting underutilized commercial properties into affordable housing has become an increasingly relevant strategy in meeting urban housing demands. With the rapid urbanization of major metropolitan areas, there is a rising need for affordable, accessible housing solutions ^[3]. Adaptive reuse offers a unique opportunity to address this issue by converting vacant office buildings, warehouses, and retail spaces into affordable living units. This approach provides much-needed housing and contributes to the regeneration of urban neighborhoods, fostering a sense of community while preserving the city's historical character ^[4].

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1.2 The Challenge of Underutilized Commercial Properties

The issue of underutilized commercial real estate has become more pronounced in the wake of the COVID-19 pandemic, which caused significant shifts in work and retail patterns. Many office buildings, shopping centers, and industrial properties that once thrived have seen a sharp decline in demand, leading to increased vacancies ^[5]. The post-pandemic economy has accelerated remote work trends, reducing the need for traditional office spaces and contributing to oversupply commercial properties in some urban areas. As a result, these underperforming spaces are left vacant, often for extended periods, exacerbating the urban blight and economic stagnation in affected areas ^[6].

These vacant properties present multiple challenges, including economic disinvestment, higher maintenance costs, and environmental degradation. Furthermore, vacant commercial spaces often attract crime, create eyesores, and contribute to the decline of surrounding neighborhoods ^[7]. Repurposing these structures into affordable housing offers a promising solution. Not only does it address the surplus of underutilized commercial real estate, but it also helps revitalize neighborhoods by converting abandoned spaces into vibrant, functional housing units, reducing urban decay while contributing to the area's overall social and economic health ^[8].

1.3 Affordable Housing Crisis

The affordable housing crisis is a pressing issue globally, with millions of people living in inadequate housing or facing housing insecurity. In many major cities, the demand for affordable housing far outpaces the supply, resulting in soaring rents, overcrowded living conditions, and increasing homelessness ^[9]. The shortage of affordable housing is driven by a variety of factors, including population growth, rising construction costs, and limited availability of land in urban centers. This crisis is particularly acute in high-demand cities where land prices are escalating, and housing production struggles to keep up with the growing demand ^[10].

Adaptive reuse provides a viable solution to this housing shortage by transforming vacant commercial properties into affordable residential units. By converting underutilized buildings into housing, cities can rapidly increase the supply of affordable homes without demolishing existing structures or developing new land ^[11]. Adaptive reuse also helps to regenerate urban areas by breathing new life into neighborhoods that may have fallen into decline. This process addresses the urgent need for affordable housing and promotes environmental sustainability, economic revitalization, and the preservation of architectural heritage, making it a compelling solution to the affordable housing crisis ^[12].

1.4 Literature Review Scope and Methodology

This study employs a targeted literature review methodology to identify, evaluate, and synthesize scholarly and practice-based insights relevant to adaptive reuse strategies and their application in delivering affordable housing. The review was designed to capture interdisciplinary perspectives from urban planning, finance, architecture, sustainability, and public

policy to develop a holistic understanding of the financial, legal, and social mechanisms influencing the transformation of underutilized commercial properties into residential spaces.

A structured search process was conducted using academic databases such as JSTOR, ScienceDirect, Scopus, and Google Scholar, supplemented by grey literature from policy think tanks, government agencies, and industry reports. Keyword combinations such as “adaptive reuse + affordable housing,” “commercial property conversion,” “urban regeneration,” “sustainable real estate development,” and “financial strategies for reuse projects” guided the search, while a snowballing technique was employed to identify additional foundational and contemporary works cited in relevant sources. Literature published between 2005 and 2023 was prioritized to reflect both historical context and emerging discourse, with select foundational texts included regardless of publication date due to their conceptual significance.

To ensure analytical coherence, inclusion criteria were applied to retain peer-reviewed articles and policy reports that addressed adaptive reuse in residential or affordable housing contexts, provided insights into financial structuring or regulatory frameworks, or presented empirical evidence from urbanized economies with applicable policy environments. Conversely, sources were excluded if they focused solely on adaptive reuse in non-residential sectors such as cultural or educational spaces, addressed housing policy in abstract terms without relevance to reuse, or lacked methodological rigor.

From an initial pool of documents, 45 key sources were selected after relevance and quality screening. These were analyzed across three evaluative dimensions: topical relevance to core themes such as financing and regulation, geographic or contextual transferability to comparable urban settings, and theoretical or practical contribution to the field. Literature was further grouped and cross-referenced with dominant conceptual threads including sustainability in real estate finance, mixed-use urban redevelopment, and historic preservation incentives. This methodological approach ensured that the literature review was not only reflective of current academic and policy discourse but also critically evaluative and pragmatically applicable. It positioned adaptive reuse as a multidimensional solution that balances economic feasibility, regulatory navigation, social inclusion, and environmental sustainability.

2. Financial Models and Strategies for Adaptive Reuse

2.1 Cost Estimation and Capital Investment

Accurately estimating the conversion costs for adaptive reuse projects is essential for the financial feasibility of such ventures. These projects often involve significant modifications to existing structures, including upgrading plumbing, electrical systems, HVAC, and addressing compliance issues with modern building codes. Additionally, adaptive reuse projects may uncover hidden challenges, such as the presence of hazardous materials like asbestos or lead, which can substantially increase costs ^[13]. Accurate cost estimation is crucial not only to prevent financial overruns but also to secure the necessary financing. Without a detailed understanding of the potential costs, developers risk underestimating the project's financial requirements, which could lead to delays, funding shortages, or even project abandonment ^[14].

To mitigate the financial risks of inaccurate cost projections, developers often conduct thorough feasibility studies during the early stages of the project. These studies typically include detailed site inspections, structural evaluations, and consultations with engineers, architects, and contractors to provide an accurate estimate of renovation and conversion costs [15]. Additionally, involving experienced professionals who understand the complexities of adaptive reuse can help identify cost-effective solutions and construction methods that minimize expenses without compromising quality. Implementing contingency funds as part of the project's budget is another common strategy to ensure that unforeseen issues, such as structural damage or regulatory changes, can be managed without jeopardizing the project's overall financial viability [16].

Furthermore, developers must consider the long-term capital investment needed to maintain the property once it is converted into affordable housing. Beyond the initial costs of conversion, operational expenses such as property management, maintenance, and insurance must be accounted for in the financial model. These ongoing costs can impact the long-term profitability of the project, making it essential for developers to structure the financing in a way that ensures financial sustainability throughout the life of the building. In many cases, adaptive reuse projects may be supported by public funding or tax incentives, which can offset some of the capital expenditures and ensure that the project remains viable in the long term [17].

2.2 Financing Sources and Mechanisms

Securing funding for adaptive reuse projects often requires a blend of traditional financing methods and innovative funding mechanisms, especially considering the potential risks associated with such projects. Traditional sources of financing include bank loans, bonds, and mortgages, which remain the cornerstone of many large-scale developments. However, these conventional methods can sometimes be difficult to access for adaptive reuse projects, particularly when lenders perceive the projects as riskier than new construction. As such, developers have increasingly turned to alternative sources of capital to fund these projects [18].

Crowdfunding has emerged as a popular option, where smaller investors can collectively contribute funds for development projects, enabling developers to bypass traditional lending institutions. Similarly, impact investing—where investors seek financial returns alongside social or environmental impact—aligns well with adaptive reuse's goals of sustainability and community regeneration, making it an attractive option for developers looking to finance projects with a positive social impact [19].

Government incentives, such as tax credits for historic preservation or low-income housing tax credits, can significantly reduce the cost of adaptive reuse projects. These incentives can be a game-changer, especially when developers face the higher costs associated with retrofitting older buildings. Historic preservation tax credits, for example, offer a percentage of the renovation costs as a tax rebate, reducing the overall financial burden [20]. Additionally, public-private partnerships (PPPs) are increasingly being utilized to fund adaptive reuse projects. Through PPPs, local governments collaborate with private developers to pool resources, share risks, and reduce financial

barriers to entry. These partnerships often involve government support in the form of grants, low-interest loans, or tax rebates, making adaptive reuse financially feasible even in areas with limited private investment potential [21]. Green bonds and other sustainable finance options are becoming increasingly important for large-scale adaptive reuse projects aimed at creating affordable housing. These financial instruments, which focus on environmentally friendly investments, align with the principles of adaptive reuse, as these projects typically involve repurposing existing structures rather than building new ones from scratch [22]. Green bonds help developers secure funding for environmentally sustainable projects, which may include energy-efficient retrofits, water conservation systems, and green building certifications. By leveraging these financing mechanisms, developers can reduce the cost of capital, making adaptive reuse projects more financially attractive and allowing for greater long-term financial viability [23].

2.3 Revenue Generation and Long-Term Financial Viability

Ensuring the financial sustainability of adaptive reuse projects, particularly those focused on affordable housing, involves balancing revenue generation with the need to maintain affordability for residents. One approach to achieving this balance is the incorporation of mixed-use developments [24]. By integrating commercial spaces such as retail shops or office units into residential adaptive reuse projects, developers can diversify revenue streams, ensuring that the project remains financially stable. These commercial spaces can generate steady income, which helps offset the costs of the affordable housing units. Additionally, mixed-use development enhances the vibrancy of the neighborhood, creating a more dynamic and sustainable urban environment that benefits both residents and businesses [25].

Another important strategy for ensuring the long-term financial viability of adaptive reuse projects is the use of rent control models and long-term lease agreements. While rent control can limit the revenue generated from individual housing units, it ensures that the property remains affordable for low-income tenants over the long term. This strategy not only helps meet social goals but also makes the project more attractive to governments and non-profit organizations that prioritize stability and affordability in urban housing. Long-term lease agreements, particularly those with governmental bodies or charitable organizations, provide additional revenue stability by securing tenants for extended periods, thus reducing the risk of vacancy and enhancing the financial predictability of the project [26].

However, the challenge of generating sufficient revenue from affordable housing projects while maintaining quality remains an ongoing concern. In many urban areas, the cost of construction and land acquisition can make it difficult for developers to achieve profitability while keeping rents low. To address this challenge, developers must carefully design business models that balance the need for affordability with the potential for revenue generation [11]. This may involve using a combination of tax incentives, low-interest financing, and operational efficiency measures to reduce costs and increase revenue. Ultimately, the success of adaptive reuse projects depends on the ability to maintain this balance, ensuring that the project remains both financially sustainable and beneficial to the broader community [21].

3. Legal and Regulatory Considerations

3.1 Zoning and Building Code Compliance

Repurposing commercial properties for adaptive reuse often involves significant legal challenges, particularly when it comes to zoning changes and building code compliance. Zoning regulations, which dictate how land can be used in a given area, are often tailored to specific types of development, such as commercial or residential use [27]. Converting a commercial property into affordable housing often requires changing the zoning classification to permit residential occupancy, which can be a lengthy and complicated process. In addition to zoning changes, developers must also navigate local building codes, which set the standards for construction safety, structural integrity, and accessibility. These codes may require extensive modifications to the existing structure to meet modern residential standards, adding time and cost to the project. For instance, fire safety requirements, such as installing sprinkler systems or upgrading exits, may be more stringent for residential buildings than for commercial spaces, requiring additional capital investment [28].

Navigating these legal barriers requires a proactive approach, including engaging with local authorities early in the planning process. Developers should work closely with zoning boards and building inspectors to ensure that the project aligns with local regulations and to identify any potential roadblocks early on. In some cases, it may be necessary to seek zoning variances or apply for conditional use permits to allow for the conversion of the property [29]. Engaging experienced legal counsel who understands the local regulatory environment can also help developers navigate these challenges efficiently. Additionally, developers can explore opportunities for collaboration with local government officials to streamline the approval process and ensure that the project complies with all necessary codes, ultimately reducing delays and unexpected costs [30].

3.2 Affordable Housing Regulations

The regulatory landscape for affordable housing is complex and requires careful attention to eligibility requirements, affordability criteria, and compliance with local, state, and federal regulations. Adaptive reuse projects targeting affordable housing must meet these strict requirements to ensure that they provide housing options for low- to moderate-income families [31]. For instance, federal programs such as the Low-Income Housing Tax Credit (LIHTC) program impose specific guidelines on income limits for tenants, rent caps, and the duration for which housing must remain affordable. Developers must thoroughly understand these regulations to ensure that the property qualifies for government funding or tax incentives. Additionally, local affordable housing requirements often dictate how many units in a building must be set aside for low-income tenants, as well as the level of affordability that must be maintained over time. Failing to comply with these regulations can lead to penalties, loss of funding, and legal challenges, making adherence to affordable housing laws essential for the success of the project [32].

To ensure compliance, developers must carefully integrate these requirements into the planning and design phases of adaptive reuse projects. This often involves working with affordable housing consultants or legal advisors who specialize in housing regulations. They can help developers navigate the intricacies of eligibility and affordability criteria,

ensuring that the project meets both the letter and spirit of the law. Additionally, understanding the long-term implications of affordable housing regulations is important, as the affordability criteria often remain in place for decades. Therefore, developers must plan for the long-term sustainability of the project, ensuring that the property remains affordable for future generations of tenants [33].

3.3 Incentives and Tax Credits

Government incentives and tax credits play a pivotal role in making adaptive reuse projects financially viable, particularly for those aimed at creating affordable housing. Historic preservation tax credits (HTCs) are a key financial tool for developers seeking to repurpose older commercial properties. These credits provide a percentage of the renovation costs as a tax rebate, reducing the overall financial burden of adapting a property for new uses [11]. Similarly, the Low-Income Housing Tax Credit (LIHTC) program is a significant resource for developers working on affordable housing projects. LIHTC offers tax incentives in exchange for setting aside a portion of housing units for low-income tenants, providing a substantial financial benefit that helps offset the costs of construction and renovation. These tax credits not only make adaptive reuse projects more feasible but also encourage developers to focus on community-focused, socially responsible developments [34].

In addition to these tax credits, other government incentives—such as grants, loan guarantees, and subsidies for energy-efficient retrofits—can further reduce the financial risks of adaptive reuse projects. For example, energy-efficient improvements, such as retrofitting buildings with modern insulation or renewable energy systems, can qualify for additional funding or tax breaks [35]. These incentives can significantly lower the capital investment required to transform underutilized commercial spaces into affordable housing, making adaptive reuse an increasingly attractive option for developers. By leveraging these incentives, developers can improve the financial viability of their projects, ensuring that adaptive reuse remains a sustainable solution for addressing the housing shortage in urban areas [36].

4. Economic, Social, and Environmental Impacts

4.1 Economic Revitalization and Job Creation

Adaptive reuse plays a critical role in stimulating local economic activity, particularly in communities suffering from stagnation due to vacant or underutilized commercial properties. The process of converting these spaces into affordable housing requires extensive input from professionals across various sectors, including architects, engineers, contractors, interior designers, and property managers [37]. This multidisciplinary demand creates employment opportunities during both the planning and construction phases, as well as for ongoing property maintenance and management after the project is complete. These employment opportunities can significantly bolster local economies, particularly in areas with high unemployment or limited access to stable job markets. Furthermore, adaptive reuse often encourages investment in adjacent properties, leading to a ripple effect of economic revitalization within the neighborhood [38].

Beyond direct job creation, transforming idle commercial properties into vibrant housing developments can increase property values and expand the local tax base. By bringing

new residents into previously underperforming districts, adaptive reuse projects help stimulate demand for local goods and services, attracting small businesses such as cafes, retail stores, and service providers^[39]. This resurgence of commercial activity diversifies the local economy and strengthens municipal revenues, enabling reinvestment into public services such as infrastructure, schools, and transportation. As a result, adaptive reuse serves as a powerful tool for urban economic renewal, drawing in both public and private capital while delivering tangible, long-term benefits to local communities^[40].

4.2 Social Benefits and Community Integration

Adaptive reuse contributes significantly to enhancing social cohesion and inclusivity by supporting the development of mixed-income housing in areas that might otherwise face social or economic polarization. By integrating affordable housing units within renovated commercial spaces, adaptive reuse projects can prevent the displacement of low-income residents and reduce the risk of gentrification. This integration fosters more diverse and equitable neighborhoods where individuals from various socioeconomic backgrounds can coexist and access shared amenities. Moreover, such projects often include communal spaces—like parks, community centers, or retail hubs—that encourage interaction and collaboration among residents, reinforcing community ties and improving quality of life^[41].

Numerous adaptive reuse initiatives have demonstrated measurable improvements in community well-being and social equity. For instance, in cities like Los Angeles and New York, former office buildings and warehouses have been successfully converted into affordable housing that not only meets housing needs but also preserves the cultural and architectural identity of neighborhoods. These projects often involve collaboration with local stakeholders, non-profit organizations, and community development agencies to ensure that the outcomes align with residents' needs and priorities. In doing so, adaptive reuse becomes more than a housing solution; it transforms into a vehicle for community empowerment, civic engagement, and long-term social resilience^[42].

4.3 Environmental Sustainability

One of the most compelling advantages of adaptive reuse is its positive impact on environmental sustainability. Unlike new construction, which often requires the extraction and transportation of raw materials and produces significant construction waste, adaptive reuse conserves existing structures, thereby minimizing material usage and reducing demolition waste sent to landfills. This conservation approach protects the environment and reduces energy consumption associated with manufacturing and transporting new building materials. Additionally, many adaptive reuse projects incorporate modern energy-efficient systems—such as upgraded insulation, efficient HVAC systems, and renewable energy technologies—that reduce operational energy consumption and lower the overall carbon footprint of the building^[43].

The integration of sustainability practices into adaptive reuse projects also enhances their long-term viability and appeal to both investors and residents. Green building certifications like LEED can increase property value and attract tenants who prioritize environmentally responsible living^[44]. Furthermore, many municipalities now offer additional

incentives for incorporating sustainable features, further enhancing the financial feasibility of these projects. As climate change becomes a central concern for urban development, adaptive reuse stands out as a pragmatic strategy that aligns with global carbon reduction and resource conservation goals. It offers a practical solution that balances housing demand with environmental responsibility, ensuring that urban growth does not come at the cost of ecological degradation^[45].

5. Conclusion and Recommendations

This paper explored the potential of adaptive reuse as a solution to the growing demand for affordable housing in urban areas. Through a detailed examination of the financial strategies, legal and regulatory considerations, and the broader economic, social, and environmental impacts, it has become clear that adaptive reuse offers a viable and impactful approach to repurposing underutilized commercial properties into affordable housing. Financially, adaptive reuse projects benefit from innovative financing mechanisms, such as tax credits and public-private partnerships, which help mitigate initial capital costs and ensure long-term viability. Legal considerations, including zoning and building code compliance, can pose challenges, but these can be overcome through strategic planning and collaboration with local authorities. Additionally, the social and environmental benefits, including job creation, community integration, and sustainability, further underscore the value of adaptive reuse in urban regeneration efforts.

Despite the many advantages of adaptive reuse, several challenges persist that can hinder the widespread implementation of such projects. One of the primary obstacles is securing financing, as the costs associated with retrofitting existing structures can be high, and the complexity of the projects often leads to uncertain returns on investment. Furthermore, while financial incentives such as tax credits and grants are available, they may not always be sufficient to cover the full cost of adaptive reuse, especially in areas with high property values. Another significant challenge lies in the regulatory landscape, as zoning restrictions and building codes often require extensive modifications to meet residential standards. These legal hurdles can slow down the process, leading to delays and increased project costs.

Additionally, social concerns such as gentrification and displacement remain a limitation, as adaptive reuse projects in desirable areas may inadvertently lead to rising property values and the displacement of low-income residents. While adaptive reuse has the potential to create mixed-income communities, careful planning is needed to ensure that affordability is maintained over the long term. Furthermore, adaptive reuse may not be a universal solution for all cities or regions, particularly in areas where commercial properties are not available or where the physical condition of existing buildings makes conversion impractical. As such, adaptive reuse should be seen as one of many tools in addressing affordable housing needs, rather than a one-size-fits-all solution.

To maximize the potential of adaptive reuse in addressing the affordable housing crisis, several policy changes are recommended. First, expanding financial incentives such as tax credits and low-interest loans can help overcome the initial cost barriers that often prevent adaptive reuse projects from moving forward. Additionally, streamlining zoning

regulations and simplifying the process for obtaining building permits can reduce the time and cost associated with regulatory compliance, encouraging more developers to pursue adaptive reuse as a viable option. Local governments should also consider offering additional incentives for projects that include affordable housing components, ensuring that these developments serve the needs of low-income communities.

Further, fostering public-private partnerships can facilitate greater collaboration between the government and private sector developers, ensuring that adaptive reuse projects are both financially feasible and aligned with community goals. The government can play a critical role by providing land, tax incentives, or funding support for developers who commit to creating affordable housing through adaptive reuse. Lastly, additional research is needed to explore innovative financing models and the integration of sustainability practices into adaptive reuse projects. By understanding the economic, environmental, and social dimensions of adaptive reuse, future projects can be designed to meet the growing demand for affordable housing while also promoting long-term urban sustainability.

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