KYOTO, JAPAN

Public-enabled financing to revitalize traditional housing: Kyoto's Kyo-machiya

This Good Practice examines how the City of Kyoto addresses the financial and structural barriers to revitalizing *Kyo-machiya*, its traditional wooden townhouses, which face pressures from aging, vacancy, climate risks and market underinvestment. The Public-Enabled Financing Framework is used as an analytical lens to examine how public policy can enable private investment in traditional housing renovation. Rather than treating Machiya solely as heritage artifacts, Kyoto positions them as long-lived residential assets requiring coordinated renovation, adaptive reuse, and targeted public support to reduce renovation risk for private owners.

Kyoto combines municipal grants, adaptive reuse policies, institutional coordination mechanisms, and community-based financing initiatives within its planning and resilience strategies. These interventions operate across four enabling dimensions: Stabilizing revenue through adaptive reuse, strengthening governance coordination, reducing renovation risk through targeted subsidies, and easing capital constraints through layered financing mechanisms.

Kyoto's machiya demonstrates that upgrading traditional housing is fundamentally a question of risk management and incentive alignment. Public intervention can play a catalytic role in enabling incremental, climate-compatible upgrades while preserving cultural heritage, offering other heritage-rich cities a practical pathway for aligning finance, risk management, and living heritage preservation.

Contents

Public-Enabled Financing Framework 3
- Background: Why renovation financing fails 3
- Analytical approach 3
- Theoretical foundation 3
- Framework definition 4
- Composition of the Framework 4
- Implementation logic 4
- Expected outcomes 5

Kyoto: Enabling the revitalization of Kyo-Machiya 5
- City Profile 5
- Machiya housing as living urban assets 6
- Policy evolution and institutional anchoring 7
- Kyoto's Public-Enabled Financing approach 8
- Implementation structure and process 10
- Outcomes of Machiya revitalization efforts 11

Conclusion and recommendations 12
- Replicating Kyoto's experience 12
- Looking forward 13

Endnotes 15

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Public-Enabled Financing Framework

Background: Why renovation financing fails

Traditional urban housing in historic city centers represents a distinct but often under-recognized segment of the built environment within climate and resilience strategies. These buildings are typically privately owned, culturally embedded and structurally aging. They serve not only as residential infrastructure but also as carriers of local identity.

In addition, the decarbonization of existing building stock has been identified as a critical component of climate mitigation pathways, particularly given the long lifespan and slow turnover of buildings around the world.[1]

In many cities, the challenge is not the absence of technical renovation solutions. Energy-efficiency measures, structural reinforcement techniques and adaptive reuse strategies are well established. Rather, underinvestment persists because the financial and institutional conditions required for renovation are often weak or misaligned. Vacancy reduces revenue predictability, fragmented ownership complicates decision-making, renovation costs exceed the liquidity of many owners, and uncertainty around long-term returns discourages private investment.

Analytical approach

The concept of a Public-Enabled Financing Framework in this Good Practice does not refer to a formal program adopted by a specific city. Instead, it serves as an analytical framework for examining how public policy interventions can enable private investment in the renovation of traditional housing. The Kyoto Machiya revitalization case is used as an empirical example to illustrate how these enabling mechanisms can operate in practice.

From an urban policy and infrastructure finance perspective, renovation decisions are shaped by four structural conditions: Revenue stability, governance coordination, investment risk exposure, and capital availability. When one or more of these conditions is weak, private renovation investment tends to stall.

Theoretical foundation

The Framework builds on established concepts in public policy and infrastructure finance that emphasize the role of governments in shaping investment environments. Research on climate finance highlights that public authorities often play a critical role in de-risking investments and addressing market failures that inhibit private capital deployment.[2]

In the context of urban housing renovation, these enabling interventions can be understood as mechanisms that stabilize revenue expectations, reduce governance fragmentation, mitigate investment risk and improve access to capital.

Framework definition

A Public-Enabled Financing Framework refers to a municipal enabling and de-risking model designed to unlock private investment in the renovation and revitalization of traditional urban housing. Rather than directly financing or owning housing assets, the city intervenes to correct structural investment barriers that prevent viable renovation.

From a building sector finance perspective, renovation decisions depend on four core conditions: Predictable revenue, clear ownership and governance, manageable risk exposure and sufficient capital capacity. Global assessments of the buildings sector emphasize that scaling renovation requires not only technical solutions but also enabling financial, regulatory and institutional conditions.[3] Traditional housing in historic districts frequently exhibits constraints across all four dimensions.

Composition of the Framework

This Framework offers a combination of mutually reinforcing policy and financial measures:

- **Revenue stabilization measures:** Encouraging adaptive reuse, supporting occupancy and embedding traditional housing within urban development strategies to improve demand predictability.
- **Governance and coordination measures:** Conducting inventory mapping, clarifying ownership structures and formally recognizing traditional housing within planning frameworks to reduce coordination barriers.
- **Risk reduction instruments:** Providing renovation grants, subsidies and long-term policy clarity to reduce uncertainty around cost recovery and future compliance requirements.
- **Balance sheet support mechanisms:** Absorbing part of the upfront capital burden faced by small property owners, thereby improving renovation feasibility without requiring excessive leverage. Community-based funding initiatives and partnerships with heritage organizations may further complement municipal action by broadening the financing base and strengthening social legitimacy.

Implementation logic

Implementation typically follows a structured sequence aligned with the four enabling dimensions.

- First, municipalities formally recognize traditional housing as a strategic urban asset within climate, resilience and development planning.
- Second, they conduct mapping and condition assessments to establish an evidence base for intervention.
- Third, targeted financial and policy support mechanisms are designed to address identified barriers, particularly those related to risk exposure and capital constraints.

- Fourth, engagement with private owners ensures alignment between public objectives and individual renovation decisions.
- Finally, monitoring and policy refinement create a feedback loop that strengthens long-term effectiveness.

The objective of this process extends beyond preservation. It seeks to stabilize occupancy, improve safety and habitability, enhance energy performance within heritage constraints, and reduce long-term physical and economic vulnerability of traditional housing stock. Revitalization is therefore positioned not as nostalgic conservation, but as a resilience-oriented strategy embedded within broader climate transition pathways.

Expected outcomes

The Framework generates incremental but durable improvements. These include extended asset lifespan, improved building safety and functionality, reduced exposure to physical climate risks, and strengthened district-level vitality. Because traditional housing already generates social and economic value through residential occupancy, small-scale commerce or tourism, the role of financing is not to create new revenue streams but to protect and stabilize existing ones. Public intervention helps prevent gradual decline that could otherwise lead to vacancy, deterioration and eventual asset loss.

Kyoto: Enabling the revitalization of Kyo-Machiya

City Profile

Location and regional context

Kyoto is centered in the Kansai region of western Japan and serves as the capital of Kyoto Prefecture.[4] Situated approximately 50 km northeast of Osaka, the city lies in a basin surrounded by mountains on three sides.[5] This geographical setting has shaped Kyoto's urban development and contributes to its distinctive landscape and seasonal climate patterns. Kyoto forms part of the larger Keihanshin metropolitan area, one of Japan's major economic regions that includes Osaka, Kobe, and surrounding cities.[6]

Urban scale and structure

Kyoto has a population of approximately 1.46 million residents, making it one of Japan's major historic cities while maintaining a relatively moderate metropolitan scale compared with Tokyo or Osaka.[7] The municipality is divided into eleven administrative wards and combines dense urban districts with surrounding cultural landscapes, temples, shrines and historic neighborhoods.

Historical development

Founded in 794 CE as Heian-kyo, Kyoto served as the empirical capital of Japan for more than a millennium.[8] During this period, the city developed as the political, cultural and religious center of the country. Although the imperial court moved to Tokyo in the late 19th century, Kyoto retained its status as a major cultural capital. The city's built environment reflects centuries of development, including traditional wooden townhouses, temples, shrines, gardens and preserved historic districts.[9]

Contemporary contexts and urban challenges

Today, Kyoto is internationally recognized for its cultural heritage and hosts several UNESCO World Heritage sites, including the Historic Monuments of Ancient Kyoto.[10] At the same time, the city faces contemporary urban challenges common to historic cities, including population change, housing vacancy, aging building stock and the need to upgrade existing buildings to meet modern safety and environmental standards.[11]

These characteristics make Kyoto a relevant case for examining how cities can revitalize traditional housing while addressing climate transition, urban livability and financial feasibility. One of the most prominent examples of such efforts is the revitalization of *Kyo-machiya*, the city's traditional wooden townhouses.

Machiya housing as living urban assets

Kyo-machiya form a defining component of the historic urban fabric. Characterized by narrow frontages, deep floor plan, timber structures and soil walls with moisture-buffering properties, Machiya historically combined residential and commercial functions of the Kyotoite lifestyle.[12]



Figure 1. Kyo-Machiya houses in Kyoto.

Source: Flickr, CC BY 2.0

Unlike monumental heritage sites such as temples or shrines, Machiya represent living heritage housing, which is privately owned buildings integrated into everyday urban life. They generate residential value, small-scale commercial income and cultural identity simultaneously. Surveys conducted by the City of Kyoto estimate that approximately 48,000 Machiya were still present in Kyoto between 2008-2009, although the number has gradually declined due to redevelopment pressure and aging structures.[13] Subsequent surveys suggest the stock declined to around 40,000 buildings by 2016, with continued losses recorded in recent years.[14]

Recognizing this trend, Kyoto has embedded Machiya revitalization within its broader planning philosophy.

Number of Machiya recorded in Kyoto survey (2008–2009)
~48,000

Number of Machiya recorded in survey (2016)
~40,000

Buildings primarily concentrated in
Central Kyoto wards

Construction period
Edo-Meiji periods *(1603-1868; 1868-1912)*

Major pressures
Vacancy, redevelopment, aging structures

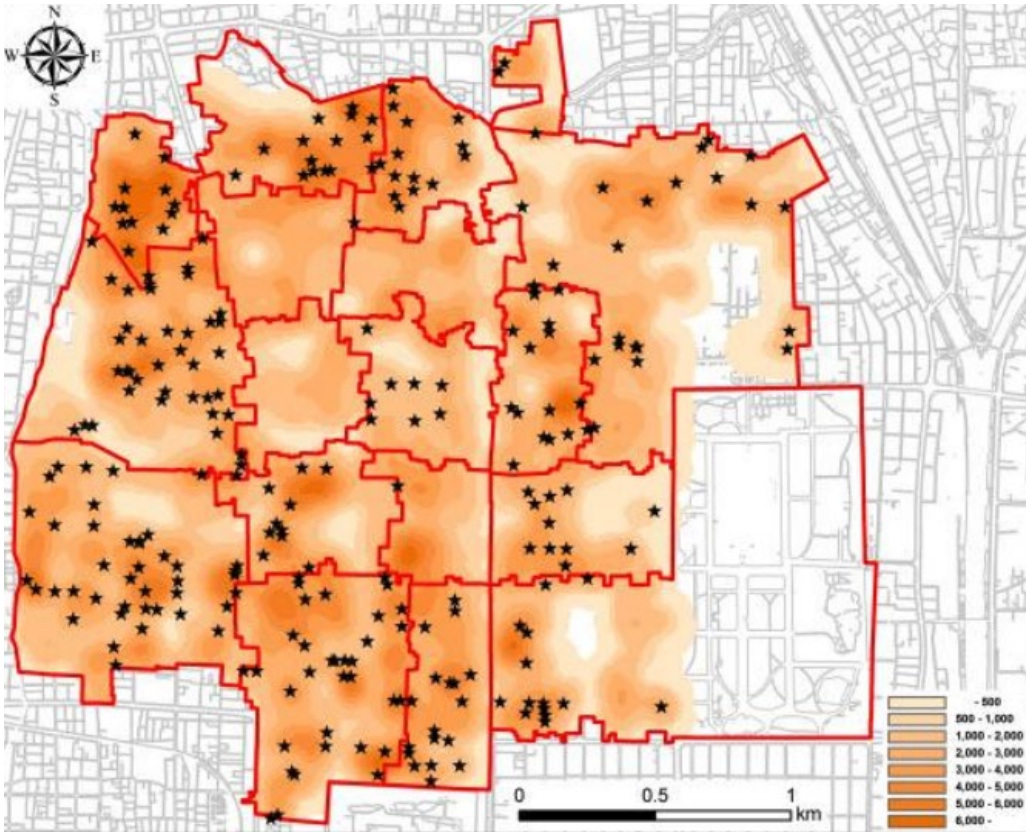


Figure 2. Distribution of Kyo-machiya in Kyoto.

Source: A case study of Kyo-machiya community-building survey in Kyoto City. 22nd CIPA Symposium.

Policy evolution and institutional anchoring

Kyoto's approach to Machiya revitalization did not emerge as a standalone heritage initiative. Rather, it evolved through a combination of cultural preservation policy, urban regeneration strategies and resilience planning.

Key policy anchors include:

- Recognition of Machiya within the city's long-term Master Plan as essential to Kyoto's cityscape and cultural continuity in Kyoto's City Master Plan.[15]
- Revitalization programs targeting vacant traditional homes, encouraging renovation and adaptive reuse outlined in Kyoto's Resilient City Strategy.
- Grant scheme designed to support owners in rehabilitating Machiya for residential, community or cultural uses.[16]
- Integration of traditional housing into resilience and livability objectives, linking preservation with social and environmental goals.[17]

This institutional embedding is critical. By situating Machiya revitalization within mainstream urban planning rather than isolating it within cultural departments, Kyoto elevated traditional housing to the status of strategic urban infrastructure.

Kyoto's Public-Enabled Financing approach

Kyoto's Machiya revitalization illustrates how the Framework operates across the four enabling dimensions identified earlier.

Revenue stabilization

Machiya have faced vacancy and declining residential viability in parts of Kyoto. Rather than restricting them to static preservation, the city has encouraged adaptive reuse, allowing traditional townhouses to function as residential units, artist studios, cultural facilities and small-scale hospitality spaces.[18]

Municipal revitalization programs have supported the reuse of vacant Machiya for community facilities, cultural venues and small-scale tourism activities, enabling property owners to generate income while maintaining traditional architectural forms.[19]

From a financing perspective, adaptive reuse improves the stability of future revenue streams, which is a key factor influencing renovation investment decisions.

Governance and institutional coordination

To address fragmentation and under-recognition of traditional housing, Kyoto has conducted Machiya inventory mapping and integrated their preservation into formal planning instruments.[20]

Kyoto has also established regulatory and institutional frameworks to support preservation. The *Kyo-machiya Ordinance*, for example, designates areas where traditional townhouses form an important part of the historic streetscape and requires advance notification before demolition of designated Machiya buildings. These provisions strengthen oversight of redevelopment pressures while reinforcing the cultural value of traditional housing.

Another key institutional instrument is the Kyoto Machiya Machizukuri Fund, which supports preservation and adaptive reuse projects through financial assistance, technical advice, and coordination between property owners and public authorities.[21] By creating dedicated institutions and regulatory frameworks, Kyoto lowers coordination costs that would otherwise discourage private renovation.

Risk reduction instruments

Kyoto has introduced a range of renovation support schemes aimed at Machiya owners, primarily designed to reduce uncertainty and financial risk associated with restoring aging traditional houses.

Under the *Kyo-machiya* preservation subsidy program, the city designates areas where traditional streetscapes remain intact and provides financial assistance for external refurbishment works. Eligible renovation activities include repairs to exterior walls, roofs, wooden lattices, and other visible architectural features that contribute to the historic urban landscape. The subsidy typically covers up to half of eligible construction costs, with a maximum contribution of approximately JPY 1 million per project, although higher ceilings may apply for individually designated Machiya buildings.[22]

These subsidies help offset the upfront costs associated with maintaining traditional construction materials and architectural forms. In addition to façade restoration programs, Kyoto also supports seismic retrofitting and structural safety improvements, providing access to specialized financing mechanisms and technical guidance for upgrading aging timber structures.[23]

Together, these instruments reduce the financial risks associated with restoring historic buildings. By lowering the uncertainty and upfront cost exposure faced by property owners, Kyoto increases the likelihood that Machiya are renovated and reused rather than demolished or abandoned.[24]

Balance sheet support and layered co-financing

Beyond risk reduction, Kyoto has developed a layered financing ecosystem that helps alleviate the capital constraints faced by individual property owners. Municipal renovation grants provide direct financial support for façade restoration, structural reinforcement, and adaptive reuse improvements.[25]

Complementing these public subsidies, Kyoto has introduced co-financing mechanisms and community-based funding initiatives. One example is the Machiya crowdfunding program launched in collaboration with the Kyoto Center for Community Collaboration. Under this scheme, project developers can receive support for proposal preparation, typically up to JPY 1 million yen and additional matching funds of up to JPY 3 million when crowdfunding campaigns achieve at least half of their fundraising targets.[26]

Institutional intermediaries further strengthen this financing ecosystem. The Kyoto Machiya Machizukuri Fund, administered through organizations such as the Kyoto Center for Landscape and Community Planning, helps coordinate subsidies, technical advice, and project facilitation for Machiya revitalization initiatives.

Together, these instruments create a layered financing structure combining municipal subsidies, civic participation, and institutional support. From a balance-sheet perspective, this ecosystem reduces the capital burden borne by individual owners and improves renovation feasibility without requiring large-scale private borrowing.

Table 1. Financial instruments supporting *Kyo-machiya* revitalization in Kyoto

Instrument	Type of support	Key features	Policy objective
Machiya Renovation Subsidy	Municipal grant	Covers up to 50% of eligible exterior restoration costs, typically capped at ~1 million yen for façade improvements such as roofs, walls, and latticework in designated preservation areas	Reduce upfront renovation cost and incentivize preservation of traditional streetscapes
Seismic Retrofitting Support	Loan / technical support	Access to financing and guidance for structural upgrades that improve earthquake safety while maintaining traditional construction	Reduce structural risk and improve safety of aging Machiya buildings
Machiya Crowdfunding Program	Public-private co-financing	Up to 1 million yen for project preparation and matching funds up to 3 million yen when crowdfunding reaches at least half of the fundraising target	Mobilize community participation and additional capital for adaptive reuse projects
Kyoto Machiya Machizukuri Fund	Institutional intermediary / project support	Non-profit fund coordinating subsidies, technical advice, and project facilitation for Machiya revitalization	Improve coordination and access to financing for property owners
Preserve Kyoto Initiative	Civic co-financing platform	Enables individuals and stakeholders to contribute financially to Machiya preservation and revitalization projects	Broaden the financing base and strengthen civic engagement

Implementation structure and process

Kyoto's approach has evolved incrementally through a structured process.

- First, Machiya were formally recognized within the Kyoto City Master Plan and related policy frameworks as essential elements of the cityscape and cultural continuity.
- Second, the city conducted mapping and awareness efforts to identify Machiya stock and highlight their cultural and social value. This inventory work provided the evidence base for targeted support and reduced informational uncertainty.

- Third, targeted financial and policy support mechanisms were introduced, including renovation grants for vacant or deteriorating Machiya.
- Fourth, engagement with private owners and community stakeholders facilitated adaptive reuse and reinforced local participation. Partnerships with heritage organizations and community-based initiatives further supplemented municipal action.
- Finally, revitalization efforts have been embedded within broader resilience and livability objectives, creating a reinforcing feedback loop between preservation, urban development, and climate transition goals.

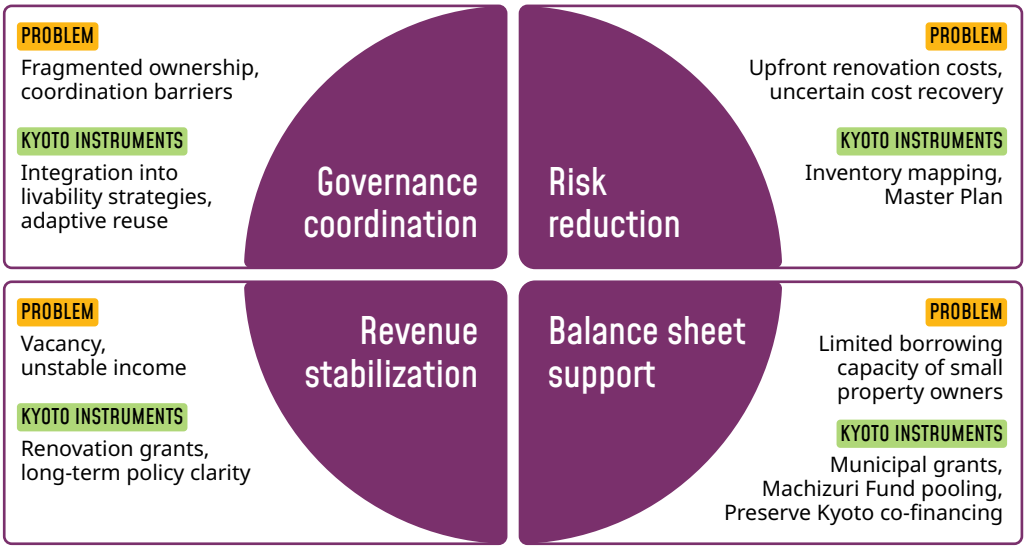


Figure 3. Public-Enabled Financing Framework for traditional urban housing revitalization.

Source: Author's elaboration based on the analysis presented in this Good Practice

Outcomes of Machiya revitalization efforts

Kyoto's revitalization initiatives have produced incremental but visible outcomes across the city's historic districts. Municipal surveys indicate that tens of thousands of Machiya remain within Kyoto's urban fabric, particularly concentrated in central wards where traditional streetscapes are still intact.[27]

Revitalization programs have enabled many Machiya to be adaptively reused for contemporary purposes, including residential housing, cultural venues, small businesses and tourism-related accommodation. These projects demonstrate that traditional townhouses can continue to function as economically viable assets while preserving historic architectural character.

Financial support programs and civic initiatives have also helped mobilize participation among property owners. Renovation subsidies, crowdfunding mechanisms and the activities of the Kyoto Machiya Machizukuri Fund have supported restoration projects and lowered the financial barriers associated with maintaining traditional buildings.[28]

More broadly, Machiya revitalization contributes to the preservation of Kyoto's historic townscape and the continuity of local cultural practices embedded in everyday urban life. By stabilizing occupancy and enabling adaptive reuse, these initiatives help prevent the gradual disappearance of traditional housing that might otherwise occur through demolition or redevelopment.

Conclusion and recommendations

Kyoto's revitalization of *Kyo-machiya* demonstrates that upgrading traditional urban housing under climate transition is fundamentally a matter of correcting structural investment barriers rather than solving technical challenges. The central challenge lies in financing constraints – unstable revenue, fragmented ownership, upfront capital intensity and limited borrowing capacity – rather than in the absence of renovation know-how.

Instead of relying on large-scale capital market instruments or framing Machiya solely as heritage artifacts, Kyoto embedded traditional housing within mainstream planning, resilience and livability strategies. Through targeted renovation grants, adaptive reuse policies and institutional coordination mechanisms such as the Kyoto Machiya Machizukuri Fund and civic co-financing platforms, the city addressed weakness across revenue stability, governance coordination, risk exposure and balance sheet capacity.

This case reframes revitalization as asset stabilization rather than revenue expansion. Climate-compatible upgrades do not primarily create new revenue streams. They protect and stabilize existing ones by reducing vacancy, deterioration and long-term physical risk. Public intervention functions as a catalytic enabler that lowers uncertainty, absorbs part of the capital burden and improves the feasibility of incremental renovation within preservation constraints.

Replicating Kyoto's experience

Kyoto's experience is particularly relevant for Asia-Pacific cities with extensive stocks of traditional residential buildings embedded in historic urban cores. From Southeast Asian shophouses to Korean *hanok* or Chinese courtyard houses, similar patterns emerge – aging structures, fragmented private ownership, underinvestment and increasing climate performance expectations.

Replication does not require copying Kyoto's exact instruments. Rather, it requires adopting the enabling logic behind them. Five core lessons stand out:

- **Recognize traditional housing as strategic urban infrastructure**

  Cities should formally recognize traditional housing as strategic urban infrastructure within climate, resilience and development planning. This shifts the narrative from nostalgic preservation to forward-looking asset management.

- **Embed revitalization within mainstream policy frameworks**

  Revitalization efforts for traditional urban housing should not be confined to cultural departments. Integration into urban development planning, resilience strategies and housing policy strengthens institutional legitimacy and long-term continuity.

- **Address financing frictions directly**

  Target grants, subsidies or concessional finance can reduce upfront capital barriers. Even modest public funding can unlock private investment when structured to mitigate risk rather than replace private capital.

- **Stabilize revenue through adaptive reuse**

  Allowing flexible residential, community or small-scale commercial use enhances occupancy and improves long-term asset viability, reducing vacancy risk and strengthening financial sustainability.

- **Act as risk reducer rather than a direct financier**

  Municipalities do not need to finance renovation in full. They are particularly well placed to reduce uncertainty, clarify long-term expectations, coordinate stakeholders and absorb part of the capital burden where markets fall short.

These lessons are particularly applicable in cities where traditional housing forms part of daily life rather than functioning solely as tourist attractions. By focusing on living heritage housing, cities can advance climate-compatible renovation without triggering displacement or large-scale redevelopment.

Looking forward

As climate transition accelerates, the revitalization of traditional housing will face both tightening regulatory expectations and rising physical climate risks.

First, regulatory standards for energy efficiency and building safety are likely to tighten. Cities may need to clarify how traditional housing can comply with evolving standards without compromising cultural value. Developing clear technical guidelines for climate-compatible upgrades within preservation constraints will become increasingly important.

Second, aggregation mechanisms could strengthen scalability. Individual building retrofits are often too small to attract institutional finance. Future models may explore district-level programs, portfolio-based financing structures, or blended finance facilities that pool traditional housing upgrades into larger investment platforms.

Third, improved monitoring and data transparency could enhance bankability. Documenting renovation outcomes such as reduced vacancy, improved structural safety, or enhanced livability. This will in turns strengthen investor confidence and policy refinement.

Finally, public intervention will remain central. As climate-related physical risks intensify, traditional housing will face greater exposure to heat stress, extreme weather and material degradation. Municipalities may increasingly act as guarantors of long-term cultural and environmental resilience, balancing fiscal prudence with the preservation of urban identity.

Kyoto's experience illustrates that revitalizing traditional housing under climate transition does not require radical financial innovation. It requires strategic public intervention that reduces risk, aligns incentives and recognizes living heritage as an asset worth sustaining. For cities across Asia-Pacific confronting similar challenges, this case offers a pragmatic and adaptable pathway ahead.

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