



The Role of Urbanization in Facilitating Adaptive Reuse of Historic Buildings: A Case Study of Choona Mandi Haveli Complex, Walled City Lahore, Pakistan

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Abstract: This paper explores the role of urbanization in accelerating the adaptive reuse of historic buildings within the walled city of Lahore, with a focus of Choona Mandi Haveli Complex. As urban areas expand and their populations increase, the need for the efficient use of existing structures becomes more crucial for the sustainable development of historic cities. The Choona Mandi Haveli Complex, a landmark building that has been adaptively reused as an educational institute and as an official purpose, in different time periods. The research meticulously examines current issues, such as economic, social, environmental and regulatory factors, that defines the implementation of these projects within historic urban environment. Through a comprehensive literature review, pictorial and visual surveys of selected sites, the paper identifies the best practices and challenges in achieving the goals of adaptive reuse. The adaptive reuse of the historic buildings supports to balance the contemporary needs and protection of heritage sites. The core objective of the research is to evaluate the adaptive reuse of Choona Mandi Haveli, being the most spacious building in the old city. The research focuses on providing guidelines for appropriately reusing historic monuments to reduce the impacts of urbanization within historic cities of Pakistan.

Key words: Urbanization, Adaptive reuse, Historic monuments, Sustainable urban development

1. Introduction

During the 21st century, urbanization expedited the expansion of cities due to the population increase. Rapid demographic developments in urban areas have become a continuous process, and historic cities are also part of this industrialization and commercialization (Zeayter & Mansour, 2018). As a result of urbanization, the urban heritage is vanishing at a nerve-wracking rate (Chandan & Kumar, 2019). However, international, national, and local communities are putting all their efforts into safeguarding the urban heritage from mishandling and mistreatment, substituted by concrete structures (Fakhouri & Haddad, 2017). The historic cities are now part of this urbanization and are being treated erroneously due to inappropriate policies and current interventions. These heritage sites are being distorted, and deteriorating their historical context and value (Geng et al., 2023). The manifestation of urbanization can be seen everywhere, globally. However, appropriate use of historic buildings can enhance the historical and tourist value of the built heritage. In this age of rising urbanization, heritage sites play a crucial role in achieving sustainability in historic cities. Urban growth, as a result of increased commercial activities, is applying a burden on the intricate heritage sites, creating a risk of permanent damage and the out-migration of residents. Historic cities are becoming more and more challenging while investigating urbanization's influences on sustainable

development (Leonardo, 2007).

The Choona Mandi Haveli Complex is located in the northwest corner of the historic city of Lahore, near the UNESCO world heritage site Lahore Fort. The complex is triangular and comprises 2.71 hectares. The complex consists of three havelis, Haveli Jamadar Khush hal Singh, Haveli Teja Singh, and a third haveli, constructed during the Sikh period (Leonardo, 2007). The complex is valuable due to its location and historical and architectural characteristics. It has been converted into a Women's College named Nawaz Sharif Girl's College. It includes thirty (30) classrooms, a library, five laboratories, and a hall for multipurpose activities with a capacity of 350 persons, administrative offices, and a residence for the principal. All spaces can describe the places occupied by the complex, and it has been converted into an educational institute to facilitate the residents in terms of their priority needs (Sohail, 2020).



Figure 1: A view of Haveli Khush Hal Singh (Source: Jabbar, 2017)

1.1 Problem Statement

Adaptive reuse offers countless benefits, including environmental benefits such as minimizing material wastage and lower carbon footprints, economic benefits such as cost savings and increased property value, and social advantages like regenerating neighborhoods and maintaining the city's identity. However, the success of such adaptive reuse projects is influenced by unplanned and rapid urbanization. Concerns related to economic trends, regulatory frameworks, social dynamics, and technological advances play a vital role in determining the feasibility and outcomes of these projects (UNESCO, 2010).

1.2 Research Questions

The main question of the research is to give an insight for the adaptive reuse of the historic structures due to the increase in urban population. There are number of merits and similarly, there are various challenges. Therefore the question arises,

“How the Urbanization can facilitate the adaptive reuse of the heritage sites, maintaining the authenticity and identity of the artifact.”

1.3 Objectives of the Study

The core objective of the research is to generate an awareness for expediting the adaptive reuse to fulfil the contemporary needs of the residents. It can help to manage and monitor historic buildings, facing all the timely challenges, for the long term benefits.

1.4 Significance of the Study

By examining case studies from various urban settings, analyzing current policies, and identifying key drivers and barriers, the study provides a comprehensive understanding of how urban growth can enable the adaptive reuse of historic structures. The findings will offer valuable insights for urban planners, policymakers, architects, and developers, highlighting best practices and recommending strategies to enhance the integration of adaptive reuse in urban development plans. Through this lens, the research underscores the potential of adaptive reuse as a sustainable solution to the challenges posed by urbanization, promoting the safeguarding of cultural heritage while accommodating the needs of modern capital.

2. Literature Review

Adaptation is characteristically sustainable because it contains less resource depletion, a small amount of transport energy, a reduced amount of energy ingested, and less toxic waste during building execution. Advanced enactment of existing buildings is the most dangerous characteristic of refining the sustainability of the built environment (Zahid & Misirlisoy, 2021). Sustainability is a basic carter with the concept of reusing buildings. Sustainable development has become a goalmouth globally looking for stability between communal, environmental, and financial requirements. The primary revelation of sustainable development is emerging resourceful strategies that efficiently apply energy and materials (Li, Zhao, Huang, & Law, 2021).

The adaptive reuse of historic buildings within urban settings has garnered significant academic and practical interest, reflecting a confluence of sustainability, cultural preservation, and urban development. This literature review examines the existing research on the relationship between urbanization and adaptive reuse, identifying key themes, trends, and gaps in the current understanding.

2.1 Urbanization and its Influences

Globally, urbanization is associated with migrating rural populations to urban areas, resulting in cities' expansion and overpopulation. According to United Nations reports, more than 55% of the population lives in urban areas, resulting in the expansion of cities, and this figure will reach 68 % by 2050 (UNESCO, 2010). This increase in the urban population requires a holistic approach to urban planning and development, requiring advanced land use and infrastructure methods.

Rapid and unplanned urbanization is a common phenomenon occurring everywhere in the world, with a particular focus on Asian developing countries. This inevitable occurrence influenced urban heritage defilement of the historic environment. In this era of urban sprawl, cultural heritage can play a pivotal role in achieving sustainable development, as extensively documented by international organizations such as the United Nations (UN), the United Educational, Scientific and Cultural Organization (UNESCO), the International Council on Monuments and Sites (ICOMOS) (Chan, 2011).

The main issues of historic cores are the excessive population increase, industrialization, commercialization, and lack of legal frameworks. All these factors are deteriorating the historic urban fabric of the old cities. They also influence land cover and land-use objects and disturbances in an area's landscape. Rapid urbanization, with the development pressure, raises the occupancy rate and land value. Commercialization also influences residential occupancies, which persuades the change in building use. In this phenomenon, the building kept changing according to modern needs, resulting in the loss of heritage (Seraj, 2019).

2.2 Adaptive Reuse: Efficacies and Challenges

Adaptive reuse delves into repurposing existing buildings for new uses, from converting warehouses into residential occupancies to old factories into educational institutes and modern offices. It is prefigured for its sustainability merits as it saves resources by reducing the need for new structures, keeping the materials, and minimizing waste. In addition, it also enhances the architectural and historical values of the buildings, maintaining the cultural fabric of the historic cities.

Moreover, adaptability can share its role towards sustainable development and produce multidimensional benefits such as cultural, environmental, economic, and social benefits. The adaptive reuse of monuments can provide opportunities for environmental, social and economic values. However, developing countries face a lot of challenges in terms of infrastructure, commercial activities and illegal occupancies by the local residents, living neighborhood.

2.2.1 Environmental Degradation

Urbanization causes pollution, traffic congestion, and heat island effects, all of which can accelerate the deterioration of historic structures. According to Rodwell (2007), environmental changes can influence the integrity of heritage sites.

2.2.2 Economic Factors

The economic practicality of adaptive reuse of heritage sites is a dominant theme in the literature. Studies show that the initial budget can be high, required for the alterations and modifications required to upgrade the building according to the current standards. However, long-term benefits balance these challenges. In return, adaptive reuse

can enhance property values with increased economic activities in the neighborhood, with a significant saving compared to demolition and new constructions. In addition, incentives such as tax reductions can accelerate the process.

2.2.3 Social and Cultural Aspects

Inspections of social and cultural aspects are critical in achieving the process of reusing historic buildings for a different reason. A Community's identity is closely related to its historic landscape, which is crucial in conserving the historic structures and providing a connection to the residents with the past. Adaptive reuse of historic buildings also contributes in exceeding the old and neglected heritage to a better culture with participation of community and its unity.

2.2.4 Regulatory and policy Frameworks

The use of tools and techniques plays a vital role in influencing adaptive reuse, along with this the use of building codes, zoning laws, and the rules made for the preservation of historic buildings support and impede adaptive reuse according to the ways these are implemented in the process.

2.2.5 Case Studies and Best Practices

Extraordinary insights are extracted by implementing factual research from adaptive reuse projects. For instance the transformation of Choona Mandi Haveli into an educational institute can be used to delve into the significance of adaptive reuse, showing successful blending of cultural, historical and architectural heritage with modern needs and requirements. Similarly global cities such as New York, Melbourne, and Toronto reveal the successive stories to expedite adaptive reuse, determination of space, and a strong cultural preservation ethos through the process of urbanization.

2.2.6 Challenges and Barriers

Although adaptive reuse manifests its benefits in the modern world, it faces various challenges as well. Regulations of the area induce hurdles along with high cost of rehabilitation. Additionally structural and safety concerns can cause hindrance and intensive planning with alternative successive design solutions are to be implemented for the historic preservation of modern functions.

3. Research Methodology

Primary and secondary sources are used to collect data information for the research. Articles related to the adaptive reuse and architectural characteristics of historic buildings have been collected for inclusion in the literature review. Literature has been collected from journals, magazines, and books from the electronic and print media. Archival data about the previous work done to conserve the selected case study, the Choona Mandi Haveli complex, and data about the adaptive reuse of the Choona Mandi complex have been collected. A case study-based methodology has been adopted to analyze adaptive reuse as an educational institute. The Haveli complex is spacious enough to accommodate, classrooms, laboratories, offices, and a spacious hall for 350 people. After analyzing the case study, a detailed discussion was conducted about the environmental impacts of adaptive reuse on neighborhood areas.

4. Case Study: Choona Mandi Haveli

4.1 Location & Context

The Choona Mandi Haveli Complex is situated near Lahore Fort and covers 2.71 hectares. It is triangular in shape. It was constructed in 1817. There are three streets: Moti Bazaar is on the west, Choona Mandi Bazaar is on the northeast, and Jammadar Khush Hal Singh is on the south. The area can be assessed through Masti Gate or Moti Bazaar.

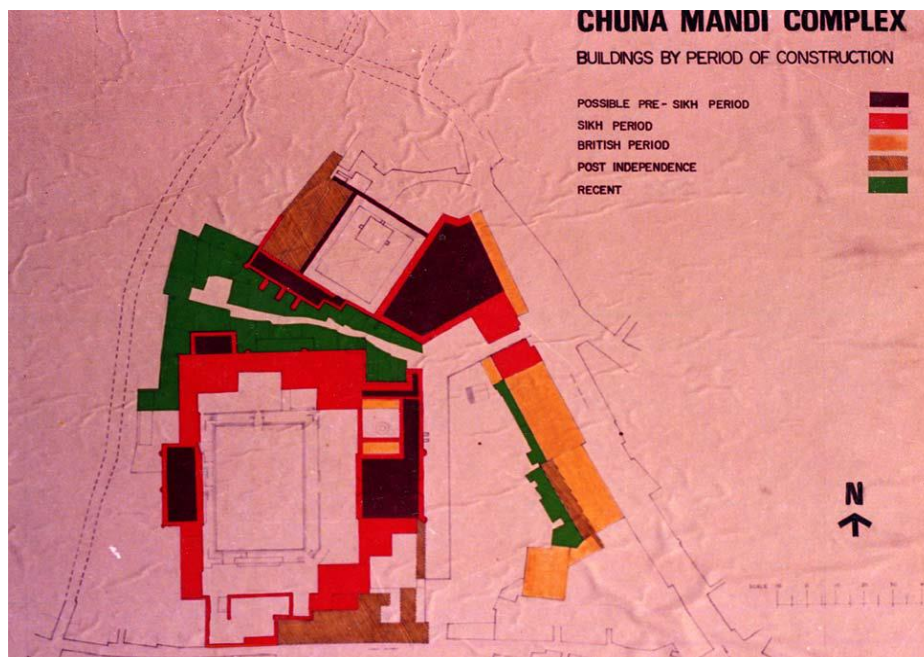


Figure 2: Layout Plan of the Choona Mandi Haveli Complex (Source: AKCSP)

The Choona Mandi Haveli complex, now Nawaz Sharif Girl's College is situated in the historic area of Choona Mandi which is in the close vicinity of Lahore Fort within walled city of Lahore. The area comprises narrow curving streets, congested bazaars and various architectural landmarks showcasing the historic records of the past. Choona Mandi is an area that has deep roots in the Mughal era. The area is named after "Choona" (lime) which was used in the construction during the Mughal Empire. The area was a favorite place for the Sikh devotees, being the birthplace of Guru Ram Das. The streets link the area with Chowk rang Mehal and Kashmiri gate. Guru Ram Das's birthplace is Janam Asthan Guru Ram Das (Jabbar, 2017).

The Haveli Khushhal Singh is part of the Choona Mandi Haveli Complex, and Jammadar Khushal Singh was a noble of the court of Maharaja Ranjit Singh. The haveli suffered a lot after the decline of the Sikh Monarch. This haveli is the most spacious haveli within the walled city of Lahore. It reused multiple functions, such as being adaptively reused as Zilla (District) School, and later on, it was changed into a central Model School. It was also used as a First Government College in Lahore. Currently, it is being used as a Girl's college.



Figure 3: A view of the Haveli Complex developed by AKCSP

After the fall of the Sikh Monarchs, the haveli suffered greatly due to inappropriate planning and socio-cultural changes. The mishandling of heritage properties resulted in two diverse conditions: the owners' inability to renovate and maintain their properties and illegal construction due to increased commercial activities. Consequently, the Haveli complex started to deteriorate, and there was a threat of losing this valuable heritage.

4.2 Architectural Characteristics

There are three havelis in the complex, Haveli Khush Hal Singh, Haveli Teja Singh, and a third haveli. The Haveli Khush Hal Singh was built around a courtyard and is of three story structure. The main haveli covers an area of 9616 m², with a floor area of 6500 m². It is comprised of a group of buildings and it is accessed by an entrance named as Dewhri in the center. The façade of the haveli is very impressive, in terms of architectural characteristics. The Haveli is now being used as a Girl's College and there are number of classrooms, research laboratory, workplaces and a multipurpose hall (M. Khan, 2013).

The second smaller haveli was formerly an extension of the Girl's College but it has been ruined completely and can't be used as an educational purpose and then its function was changed to a recreational center for women. The floor area of this haveli is 6800 m² and this large floor area depicts that this haveli is also very spacious. This haveli has also a basement and the basement is in dilapidated condition. There are remains of this haveli in the northwest side. The third haveli is smaller in size and is being use as a women club. The total covered area of this small haveli is 1200 m² (M. Khan & Mumtaz, 1985).

The entrance to the haveli Complex is through a row of double story houses. The area has been developed in the British Period. The huge entrance was constructed during the 1950s. In 1986, the central fountain was removed for an official visit. There was an elephant house adjacent to the haveli Complex.

4.3 Historical Background

The respected courtier of the Maharaja Ranjit Singh was originally a Hindu Brahman. He was a gatekeeper at start of his career and he was promoted to the rank of a high officer due to his loyalty to the Raja. Ranjit Singh also convinced him to adopt Sikhism. Khush hal Singh died in 1844 and was cremated in his own garden, outside Masti gate.

Jamadar Khush Hal was very close to the Maharaja and his haveli was constructed near the Fort with the financial help of the Maharaja Ranjit Singh. He illegally occupied the land for haveli from number of tenants without any compensation.

Jamadar Khush Hal Singh was died in 1844 and all his property was inherited to his nephew Raja Teja Singh, although, one of his three sons, Sardar Baghwan Das, was alive at the death of Khush hal Singh. Raja Teja Singh was

declared as Raja of Sialkot during the British Empire. One of his brother Raja Harbans got all the property in inheritance. In 1906, he died and his son Sardar Fateh singh got the property and fief of Sheikhpura. He was succeeded by Raja Dhayan Singh. As per author of the book Tareekh-i-Sheikhpura, he was alive till 1947 and migrated to India. It is confirmed by the historic timeline that the two havelies were constructed by the Khush Hal Singh and Teja Singh (Tirmizi, 2010).

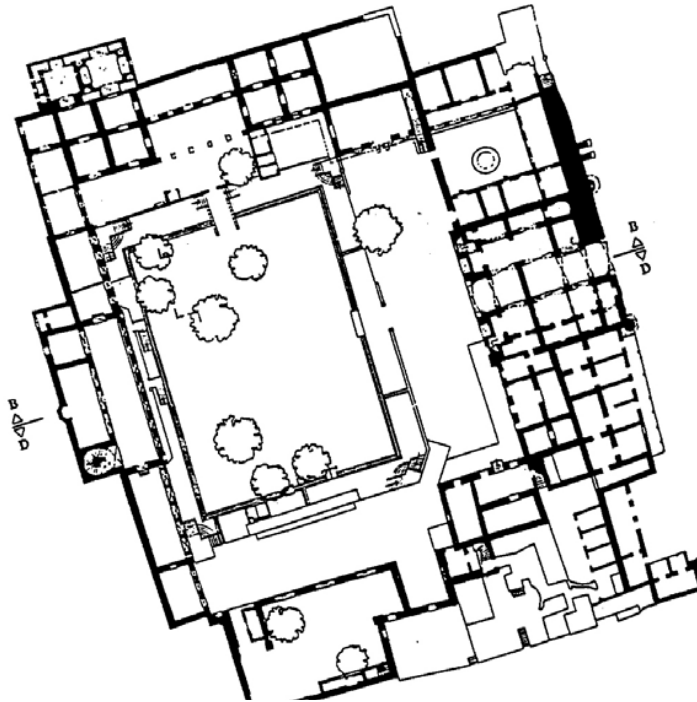


Figure 4: Ground Floor Plan of the Haveli Khush Hal Singh (Source: AKCSP)

The Complex was effected by the human vandalism and being used for multiple functions in different time period respectively. Jamadar Khush Hal constructed this haveli on the west and left an open area for the development of the garden. The haveli has been composed of group of monuments, triangular in shape, accommodating the three havelies for the residence of Khush hal Singh. Close to the back garden, there were female residences and a basement was also constructed beneath the garden.

There were large halls on the south and west side for the reception of the state guests. There was an elephant house in the south, with a hammam, however, the roof has been in dilapidated condition. It was a favourite hobby of the Sikh families that the female apartments were usually constructed on the upper floors. Therefore, Raja Teja Singh added third floor in the haveli for the female accommodation.

The second Haveli, built by Raja Teja Singh is an addition to the complex during the period of Raja Khush Hal singh. The entrance is through the Dewry which is a unique feature of the Sikh complexes. In the middle of the constructed portion, there was a garden and it is one of the surviving gardens in the walled city of Lahore. It was stated that the raja harbans Singh, grandfather of Dhiyan Singh was used to live in that haveli during 1884 (Jabbar, 2017).

The construction of the third haveli which is small in area as compared to the rest of the two havelies, is not sure. Its construction is on the east of the southern gate. The architecture of this haveli tells the story that it might have been built in the British period. An entrance hall and a living room was present on the first floor. The farrash khana is now vanished.

Tikka Dhayan Singh transferred to India in 1947 with his family members. He placed all his belonging in the main haveli. The Punjab mounted police took the custody of the haveli in early 1948. After that CIA took the control, soon after that. The Haveli complex was under their custody until 1986. However, CIA did not take any measures for the protection of the building except for the slight maintenances and variations. In 1951, the southern wing of the haveli was ruined and murdered some policemen.

In 1986, the Chief Minister of Pakistan, Nawaz Sharif, declared to evacuate the premises and transformed it into girls' college. However, the change was done without any concern of the brittleness of the buildings. Moreover, the Communication and Works Department of Punjab started some uncaring repairs without any record of the original construction. In 1987, the Chief Minister understood the situation and ordered the proper restoration plan.

In 1987, Mian Nawaz Sharif, the Chief Minister of Pakistan recognize the historical value of the Haveli Complex and ordered to the proper refurbishment of Haveli Jamadar Khush'hal Singh and suitable use of smaller haveli. After this order the destruction was stopped (Haroon et al., 2019).

The architect planned the following:

- Classrooms, library, multiuse hall, science laboratories, administration offices, common rooms, staff rooms, prayer hall, open grounds and principal's residence.
- Reuse and preservation of present structures along with assembling new facilities for the college.
- Structural association of worsening buildings.
- Countering the negative effects of earlier interventions.
- Removing private dwellers from the Choona Mandi Complex.

The external garden and the interior enclosure are the largest open spaces left. The courtyard has 50 by 70 meter rectangular space. It was cleared of all secondary structures of CIA period. The courtyard is lower than surrounding buildings. It also has wide steps along the northern and southern wings. These are sometimes used as outdoor classes.

4.4 Results and Discussions

Adaptive reuse, the methodology of repurposing of old buildings for new functions, maintaining their authenticity, identity and historical significance. It describes a strategy to balance the negative impacts of urbanization. The methodology has its benefits and constraints as well. This is the right time to prepare some guidelines for the appropriate use of old structures, saving resources and enhancing their historical, social, environmental and economic values. The transfer of static historic properties to dynamic purposes can minimize the maintenance budget and upgrade the land value. We can determine the adaptive reuse as a mitigation strategy.

- Adaptive reuse of the historic buildings ensures the protection of the cultural heritage. According to the Cantell (2005) arguments, adaptive reuse permits historic monuments and sites to continue towards enhancing the cultural values. As in the case of Lahore Fort, Shalimar Garden, Tomb of Jahangir and many more which are good examples of appropriate adaptive reuse.
- Through adaptive reuse, environmental sustainability can be achieved through minimizing environmental impacts, caused by the demolition of old structures and construction of new structures.
- Adaptive reuse of the old structures can accelerate commercial activities within and surrounding of the historic area. It can be done through enhancing the tourist value by accommodating the needs of the visitors and tourists.
- Community participation in the adaptive reuse of the historic monuments can be resulted in the social attachment with the monument and enhance the sense of ownership and possession.

With all these benefits, the process of adaptive reuse has multiple challenges, in terms of initial cost required for the immediate renovations, uncertain load on the infrastructure of the neighborhood, loss of privacy of the residents and a lot other.

But if we compare merits and constraints of the adaptive reuse, and determine the existing situation of the resources, we have to move towards adaptive reuse, because whatever the challenges, however, they are minimum as compared to the new constructions.

In case of Choona Mandi haveli Complex, the complex is composed of three havelies, out of these three, two havelies are spacious and almost equal in size and historic records identify that the two were constructed by the Jamadar Khushhal Singh and we found no confirmation, in the archival data, about the ownership of the third and small haveli. The haveli is so generous to absorb various repurposes such as academic and administrative. The location of the haveli complex, near the Lahore Fort also provide the opportunity towards maintenance and an easy access.

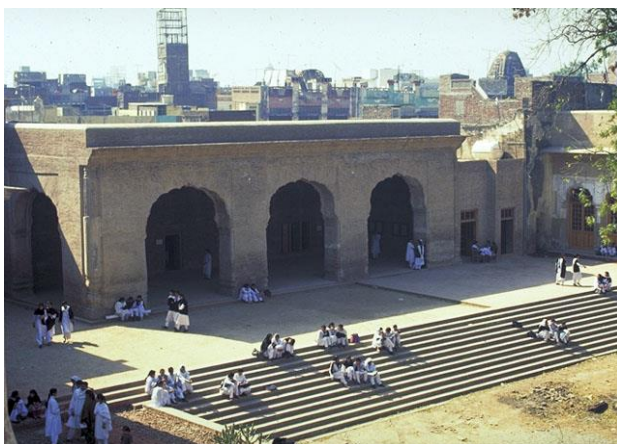


Figure 5: A view of the Haveli after adaptive reuse as Nawaz Sharif Girl's College (Source: Jabbar, 2017)

Spacious Havelies were constructed during the Mughaland Sikh period within walled city of Lahore and they cover the large areas with various sections, male and female sections, receptions, lawns and internal gardens. They are also, rich in decorations, having historical background of Persian and Islamic architecture. They also been constructed accommodating the Hindu and Jain architecture. The adaptive reuse of the Choona Mandi haveli fulfilled the need of the contemporary period which was not addressed during the Mughala and Sikh period that was education of the local residents of the old city. In the British period, it was realized that there were no opportunities for the local residents of the historic core and these havelies provided the opportunity with adaptive reuse. It also reduced the load on the new constructed educational institutes, built within and around the old city during the colonization. The other major benefit is the protection of this valuable heritage to make it appropriate for the current repurpose.

5. Conclusions and Recommendations

Comparing the merits and constraints of the Heritage sites, with a focus on the havelies within old Lahore, it has been concluded that role of urbanization in facilitating the adaptive reuse of the historic structures can be enhanced through appropriate legal framework, accommodating the owners and stake holders. There is a need to conduct extensive case studies to develop strong footings for the decision of the new purpose, a step towards the achievement of sustainable developments in the neighborhood. In addition, exploring the innovative technologies, in case of adaptive reuse, such as sustainable renovation techniques also save the energy resources, upgrading the economic status of the community, having the valuable historic buildings and heritage sites.

References

- Chan, R. C. (2011). *Old Buildings , New Ideas : Historic Preservation and Creative Industry Development as Complementary Urban Revitalization Strategies*. 1–207. Retrieved from http://repository.upenn.edu/cgi/viewcontent.cgi?article=1165&context=hp_theses
- Chandan, S., & Kumar, A. (2019). Review of Urban conservation practices in historic cities. *International Journal on Emerging Technologies*, 10(1), 74–84.
- Fakhouri, L. A., & Haddad, N. A. (2017). Aspects of the architectural and urban heritage: From registers to conservation for adaptive and modern use at the historic cores of salt and Irbid, Jordan. *Archnet-IJAR*, 11(2), 190–218. <https://doi.org/10.26687/archnet-ijar.v11i2.1256>
- Geng, S., Chau, H. W., Jamei, E., & Vrcelj, Z. (2023). Urban Characteristics, Identities, and Conservation of Chinatown Melbourne. *Journal of Architecture and Urbanism*, 47(1), 20–34. <https://doi.org/10.3846/jau.2023.17383>
- Haroon at et., (2019). Urban Heritage of the Walled City of Lahore: Critical Analysis and the Way Forward for Policy. *Journal of Architectural and Planning Research*, 36(4), 289–302.
- Jabbar, A. (2017). *Conservation & Restoration of Choona Mandi Haveli Complex, Walled City, Lahore*.
- Khan, M. (2013). *Integrated planning and monument - conservation (2013–17)*.
- Khan, M. A. (2013). *Architectural Analysis of British Colonial Railway Residential Buildings in Lahore Submitted by Supervisor Department of Architecture University of Engineering and Technology Lahore-Pakistan*.

Jabeen et al: The Role of Urbanization in Facilitating Adaptive Reuse of Historic Buildings: A Case Study of Choona Mandi Haveli Complex, Walled City Lahore, Pakistan

- Khan, M., & Mumtaz, K. K. (1985). *The Walled City of Lahore: Directions for Rehabilitation*. 43–45. Retrieved from <http://archnet.org/system/publications/contents/2621/original/DPC0072.pdf?1384766686>
- Leonardo, C. (2007). *Walled City of Lahore Project Multi-agency collaboration for urban rehabilitation in Pakistan*. 7–10.
- Li, Y., Zhao, L., Huang, J., & Law, A. (2021). Assessment Methods Concerning The Adaptive Reuse of Architectural Heritage: A Review. *Built Heritage*, 5(6), 2–19.
- Seraj, M. (2019). *Significance of Preservation of Cultural resources on Development of a Micro Destination: A Case of Shahi Guzargah Walled city Lahore*.
- Sohail, J. (2020). *Conservation-Led Marginalization : Making Heritage in the Walled City of Lahore*.
- Tirmizi, M. A. (2010). Sustainable building design strategies for Pakistan. *Proceedings: CESB 2010 Prague - Central Europe towards Sustainable Building "From Theory to Practice,"* 1–8.
- UNESCO. (2010). *Managing Historic Cities*.
- UNESCO. (2011). *Lahore Fort Master Plan A project of Norway funds-in-trust*.
- WCLA. (2009). *The Walled City of Lahore*. Lahore: Lahore Development Authority.
- Zahid, A., & Misirlisoy, D. (2021). Measuring place attachment, identity, and memory in urban spaces: Case of the walled city of Lahore, Pakistan. *Journal of Architecture and Urbanism*, 45(2), 171–182. <https://doi.org/10.3846/jau.2021.15183>
- Zeayter, H., & Mansour, A. M. H. (2018). Heritage conservation ideologies analysis – Historic urban Landscape approach for a Mediterranean historic city case study. *HBRC Journal*, 14(3), 345–356. <https://doi.org/10.1016/j.hbrej.2017.06.001>