REGENERATION AND REHABILITATION OF SARAFA BAZAAR: A STUDY FOR SUSTAINABLE HERITAGE AND FUTURE CITIES

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ABSTRACT

The goal of the project is to revitalize the historic core of the city of Multan to encourage sustainable environmental protection and socio-economic development. This case study focuses on the implementation of an intervention is 'Sarafa Bazaar'. The objective of the project is to restore the structure and provide a framework for the development of the local community. The other goal of the intervention is to improve the tourist experience and promote energy efficiency. This type of project is carried out through a process that aims to identify and address the social and urban issues that affect the development of the city. The selected section of 'Sarafa Bazaar' is approximately 80 meters from the Musafir Khana building and is connected to the other side of the bazaar. The walls of the Sarafa Bazaar are being renovated and conserved. Laser scanner was used to identify the quantity of materials and steel reinforcement was used to balance the settled facade. The renovation of the façades of the Sarafa Bazaar is being carried out to improve the overall appearance of the area. The project has been carried out through the establishment of an integrated system for the development of the city's urban area. It involves the renovation of the façades of the Sarafa Bazaar and the establishment of public spaces.

INTRODUCTION

The city of traditions and saints, which is known as Multan, is one of the oldest in the world. It has a lot to offer for those who are looking for culture. Besides being a historical site, the city's monuments also contribute to the region's image. It was constructed during the late 19th to 20th century. This structure is a representation of the historical and architectural styles of the region. The Musafir Khana and Sarafa Bazar sections were constructed using brick masonry walls. It has been damaged due to neglect and other factors, which have diminished its architectural and structural values and properties. This structure should be reinforced using the correct techniques to maintain its appearance and structural integrity. This project was carried out through a collaboration between the governments of Pakistan and Italy. The experts from both countries worked together to restore the Sarafa Bazar and other prominent structures in the city. The goal of the project is to revitalize the historic core of the city and make it one of the most sustainable and environmental-friendly cities in the world. The project was backed by a debt swap agreement between the governments of Pakistan and Italy. The construction of the Sarafa Bazar is regarded as a part of significant historical document in the city of Multan. The restoration of the historic building, which as Sarafa Bazar need an appropriate intervention aimed at improvement of functional spaces, would be a limit to the potential associated with the urban area of intervention.

METHODOLOGY, RESULTS & ANALYSIS

THEME

The restoration of the heritage, such as Sarafa Bazar follows the future sustainable developments as part of Sustainable development Goals (SDGs). It is part of a global effort to measure the level of investment in heritage and target 11.4 is set to achieve this target as shown in Figure.







applied sciences









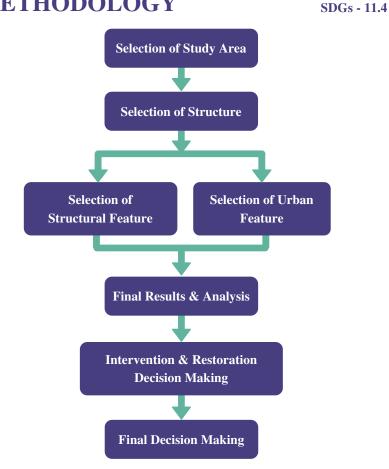






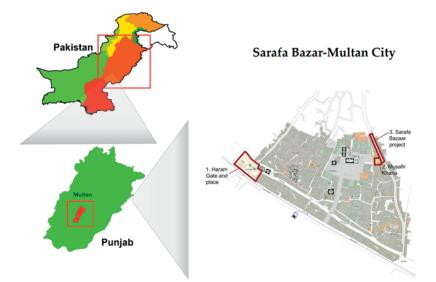


METHODOLOGY



CASE STUDY OF SARAFA BAZAR

Location Map of Site



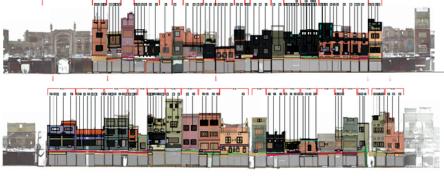
Sarafa Bazar - Location of Map Site

ANALYSIS

- Sarafa Bazaar Restoration of the façades
- Sarafa Bazaar Infrastructure Improvement Intervention
- Urban Design: Bazaar structures design

Sarafa Bazaar - Restoration of the façades

This process aims to identify and address the various social and urban issues that affect the development of an urban area. The goal of the project is to create a new general quality of living for the people of Sarafa Bazaar. The renovation of the building's faades will help solve some of the problems related to the accessibility of the Old Town and the organization of public spaces. The objective of the project is to improve the quality of life for the people of Sarafa Bazaar and encourage tourism. It also aims to make the city more attractive for tourism. It also aims to make the city more attractive for



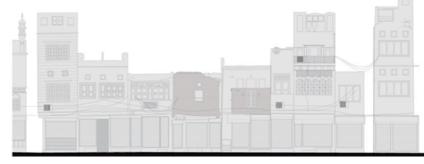
Sarafa Bazaar - Overall Restoration Intervention

Sarafa Bazaar – Infrastructure Improvement Intervention

The objective of this section of project is to rehabilitate and improve the telecommunication systems and the electric distribution system in the areas where the width of the road allows. These interventions will include the underground laying of various facilities, as well as the optimization of the system's tertiary supply. The water supply system will be improved by replacing its overhead lines with underground lines.

Urban Design: Bazaar structures design

The system of movable canvases, which are attached to the street walls, provides a valuable planning contribution to an urban area due to its importance for the development of the bazaars. It can also reduce energy consumption and improve the cross ventilation of the area. The system is designed to gradually shift the shading of the tunnels created by the canvases, which will help minimize their heat consumption.





Sarafa Bazaar Restoration Intervention - Detail of the survey and Façades Design

DISCUSSION

The Sarafa Bazaar Intervention is one of the components of the project that will be implemented in the City of Multan. Its objective is to improve the quality of life in the area and encourage tourism. It has not yet been completed, but all the necessary documents have been submitted.

The renovation of the Sarafa Bazaar will provide an integrated system for its urban setting. It will involve the improvement of infrastructures such as public lighting, shading system, new paving, and conservation of the faades of the buildings. This process is carried out to address the social and urban issues of the area. The extensive re-designing of the faades of the Sarafa Bazaar has presented many challenges. These include the accessibility of the Old Town, the lack of proper lighting, security, and traffic. The re-designing of the faades and the establishment of a comprehensive open space system will help improve the quality of life in the area.







Sarafa Bazaar after Renovation

CONCLUSION

- The study performed on historic Sarafa Bazar revealed that the inclusion of the facade of the building in the design of the system could prove to be a conclusive factor in determining the pressures and imbalances that the arches can offer.
- Besides the structural integrity of the building's facade, the study additionally analyzed the bow window's impact on the surrounding brick work.
- This study will provide a direction to the preservation and restoration of historical buildings through the use of combination projects.
- Successful restoration of heritage will also lead the development of cultural relationships towards achievement of sustainable goals.

REFERENCES

- Bersani, E., E. Invernizzi, and M. Locatelli, Pakistan-Italian Resource Centre and the Enhancement of Multan Walled City, in Sustainable Social, Economic and Environmental Revitalization in Multan City. 2014, Springer.
- Qureshi, F.H., Multan: A Spiritual Legacy 2014: Topical, Lahore. SDGS, The 17 Goals Sustainable Development Goals. 2021.
- SDGs. Sustainable Development Goals-SDGs-11.4-protect-worlds-cultural-andnatural-heritage. 2022; Available from: https://unstats.un.org/sdgs/metadata/? Text=&Goal=&Target=11.4.
 AHA. Hazrat Musa Pak Shaheed Tomb & Mosque, Multan, Pakistan. 2020;
- https://www.orientalarchitecture.com/sid/1395/pakistan/multan/hazrat-musa-pakshaheed-tomb-&-mosque.
- Imtiaz, S., et al., Built Heritage Restoration for Sustainable Development: A Study on Benefits of Pak-Italian Joint Collaboration for Restoration of The Historic City of Saints, Multan, in The 9th World Sustainability Forum- WSF 2021, Basel, Switzerland. 2021.
- Imtiaz, S., et al., Damage Assessment of Historical Buildings: A Case Study of Historic Shrine of Multan, Proceeding of 2nd Conference on Sustainability in Civil Engineering, August, 2020. 2020.
- Imtiaz, S. and S.A.R. Shah, Defects Analysis of Historic Buildings: A Case Study of The Multan Sharif (Madina-Tul-Awaliya)- City of Saints for Conservation and Restoration. Proceedings of International Civil Engineering and Architecture

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