COVID-19 AND PUBLIC SPACES: IMPROVING QUALITY AND FLEXIBILITY FOR INTERACTIVE PLACES THROUGH DESIGN

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ABSTRACT

Cities are shaped and formed through urban settings and there are many factors which give it a final built form. Corona Virus Disease (COVID-19) has changed many life patterns and has adversely affected livability of urban public spaces. Social distancing and masks have reduced the opportunities for people to interact with each other. Social life has also diminished to a great extent. This research aims to bring interventions in the design of urban open spaces to make it more flexible and healthier under the current pandemic situation. Thus, a qualitative study is conducted to cover all the aspects related to the pandemic, its history and how it has effected urban livability. Such design interventions in the urban built environment support the continuation of public life with the possibilities of healthier and pandemic resilient spaces. It brings forward strategies for better understanding of the situation and to provide awareness in general public. The research can be helpful for architects, designers and urban planners for making pandemic resilient urban spaces in the future.

Keywords: Livability, Public spaces, Flexibility, Interactive places.

INTRODUCTION AND LITERATURE REVIEW

Cities are innovative centers and places for economic growth and are sources of generating livable urban spaces. The crisis of COVID-19 has affected livability and connectivity of urban spaces, as people in cities are at greater risk of spreading the disease. Under COVID-19, the quality of living in cities has been questioned and altered. The overall system has seen a great shift in the role of the home and the neighborhood. Change is also seen in the role of transportation and information and communications technology (ICT) (Mouratidis, 2021a). Since the beginning of the pandemic, different professionals have been involved in understanding the virus and designing policies to control it. However, the role of an urban planner for developing pandemic resilient urban strategies to mitigate the risk of spread can be very significant. UN-Habitat also emphasizes that COVID-19 pandemic has brought to light a number of public space deficiencies that require immediate, medium-term and long-term attention. These deficiencies include several gaps related to accessibility, flexibility, design, management and maintenance, connectivity and equitable distribution in designing urban space network (UN-Habitat, 2020).

Other than the catastrophic influences of COVID-19, the need for innovative ideas to address the vulnerability regarding public urban spaces was also invoked. A need was felt for alternate design solutions and to think beyond the bounds of set urban principles (Jasiñski, 2020).

Public urban spaces not only play a significant role to achieve better communities by imparting public amenities, but also maintain ecological balance by generating breathing spaces in high density areas. No matter how big or small these spaces are, they are a source of several planned or spontaneous activities (Gehl, 2011). These spaces include city squares, public parks, open recreational spaces, streets and walkways and are designed to enhance the meaningful and healthy urban environment in communities. The relationship of people with public spaces however has changed since the COVID-19 pandemic. Under severe constraint on movement, the public spaces, streets, squares and parks were avoided initially by people. The impression given by this pandemic was that these public spaces were a source of spreading the virus thus they should be avoided. Later on however, the need for understanding and purposeful designing of these public spaces was felt as a means to bring together the community again (Stevens, Tavares and Salmon, 2021).

Urban open spaces are the platform for diverse social interactions. Researchers have over time proved the importance of such spaces for healthy development of human minds. The open spaces with green areas are the best locale for releasing stress. Nature has positive distractions and an ability to reduce stress (Shawket and El Khateeb, 2020). The distractions it provides through different buildings, green spaces, views of nature, water bodies, art and music, have a positive impact on human behavior. Research has proven that outdoor nature helps in quick recovery in patients suffering from stress and anxiety (Uwajeh and Ezennia, 2019). Overall and in this extended phase of the pandemic, the constraint to stay at home along with the deflation in economy has created circumstances to induce involuntary jobs and impacted a great majority by loss in income (Dong and Bouey, 2020). The need is to sustain public life in urban open spaces while preventing the spread of the virus. The new design solutions should prioritize design concepts acknowledging the current phase of the pandemic (Couling, 2014).

Internationally, researchers are responding to the need of COVID-19 via responsive design by incorporating social and ecological determinants, for creating an environment where people could have the freedom of physical activities, social health, mental progression and overall satisfaction (Morales-Rodríguez et al., 2021). Planners and practitioners should be able to intervene and enhance quality of life on various spatial scales. The systematic knowledge and in depth understanding of various ways that land use, transportation systems, urban design and housing may contribute to improve the subjective well-being of cities,

can be a key to achieve quality cities (Mouratidis, 2021b).

The paper is a synthesis of available knowledge and offers a framework for future research. Potential ramifications for urban design and policy in the face of COVID-19 and upcoming pandemics are suggested in light of the literature review. The conceptual framework and literature evaluation in this paper aims to provide a fresh framework that might direct future investigations into cities and quality of life under COVID-19. Different case studies have been taken into consideration in the local area for indepth research and analysis.

METHODOLOGY

A qualitative research has been conducted to develop an understanding of different environmental, social and economic effects of this pandemic on people through a questionnaire survey. The horizon of the survey was extended from local stake holders, to experts and policy makers for better understanding of different perspectives for the same. Considering all the possible facts, design strategies have been suggested to make such spaces healthier and flexible for public use. Stepwise framework of the research has been formulated in Figure 1.

Selection of Case Study

The selection of case study was very difficult because the concept of public square was totally different in the Indian subcontinent before the British rule. So for this type of study within the current built environment that has undergone different architectural styles was a difficult task. The local vocabulary of Indo Pak public squares starts from the walled city of Lahore. This has limited usage with a limited number of people as a reflection of social and cultural norms. while the concept of public squares introduced in British rule was the amalgamation of western and eastern influences so for this reason, case selection for proper representation of the objective was a challenge. Keeping in mind the study aim of the research the following three areas were included for detailed analysis, from which the Charing Cross was selected based on literature studied with identified factors. This case
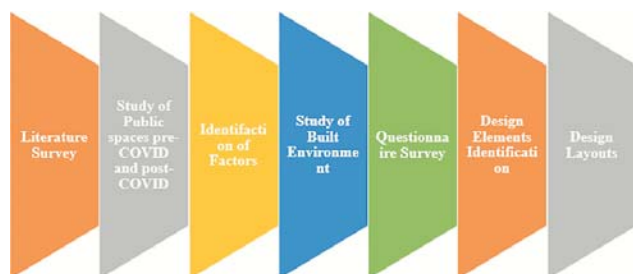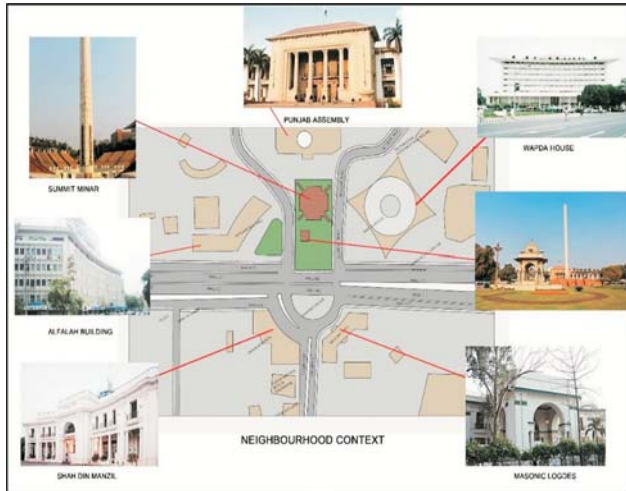

Figure-1: Methodology Framework for the Study.

Figure-2: Charing Cross Square with its Neighboring Context.

Figure-3: Existing Land Use of the Site and its Surrounding Areas.

Figure-4a: View Charing Cross.
Source: Google Images, Accessed on 1-12-21.

Figure-4b: Charing Cross Square.
Source: Google Images, Accessed on 1-12-21.

study was identified to be the most representative of the urban public squares of Pakistan (Figures 2 and 3).

- Liberty Roundabout Chowk

- Kalma Chowk

- Charing Cross

The historical analysis of the three selected areas projected the characteristics of the public squares and their historical importance within the built environment. The Liberty roundabout has undergone various design changes and after this new identity, it is now serving the same purpose as Charing Cross by becoming a major icon of built environment of the area. Whereas Kalma Chowk, which was initially designed on the same ideology has lost its identity with the passage of time due to metro train project. The selected site of Charing Cross is representative of the urban public squares of Pakistan. The Charing Cross is an urban square located on the Mall road, the oldest and busiest road in Lahore.

Charing Cross is a representation of the colonial era architectural heritage of the city. The square represents the historic glory of the city and was the new urban center of colonial era. A prime area was selected by the British for their imperial army and officers and a new network of roads linking all the prime locations was laid. The Mall road was the outcome of this vision and with the passage of time it became the focal point of many dignified private and public buildings (Aslam, 2019). Initially it was a triangular open space, but in 1913 M. Sullivan improved its visual appearance by aligning the roads and relocating its axis. His geometrical alignment of roads and relocation of Queens's canopy gave a new shape to the space and created a meaningful square (Figure 4b).

The dome shaped British pavilion, with the statue of Queen Victoria inside, increased the architectural significance of the square. The addition of Shah Din Building (1914) and Masonic Lodges (1917) added a new character to the urban environment. These buildings are identical to each other

Figure-5: View of the Charing Cross Square During a Protest.

Figure-6: View of the Charing Cross During and Protest.

and are located on the opposite side of British pavilion. The overall character of the space was changed by giving it a feeling of enclosure (Imtiaz and Mustafa, 2018). More grandeur was added with the construction of the Punjab Assembly building in 1935, which had a Neo Classical style of imperial architecture and was designed by M. Sullivan. The elite of that time preferred to spend their quality time here. The quality of space and the environment it created had a great impact on people. It was a space providing a platform for people to interact with each other, keeping the factor of livability as its prime focus.

With time, further growth took place and the Alfalah building (1962) with its counterpart, the WAPDA house (1963) enhanced the spatial arrangement and defined the geometrical enclosure. The Square gained new focus with the construction of Summit minar in 1977. The Turkish architect designed the vertical Minar of one hundred and seventy feet height rising from a water pool as a symbol of unity and brotherhood among Muslim states. This urban space transformed many times over the course of its history and became an urban node with a new name, the Faisal Square. The Square at all times had its own significance and remained a multicultural asset of Lahore's history. Today, the square is basically used as a platform of protests and rallies (Figures 5 and 6). Commercialization and increased economic development however results in traffic congestion at the junction. Nonetheless, this space has gained an important status over the years as after Prime Minister Zulfiqar Ali Bhutto the Square was frequently used as the place of protests and anti-government rallies (Naz and Ashraf, 2008).

POST-COVID-19 SCENARIO

COVID-19 has imposed many limitations on the activities of public spaces. The post COVID effect was observed on Charing Cross also. The Square previously contributed in providing a platform for social interaction, supporting a healthy and strong community and acting as part of a safe and connected network of urban spaces. Interestingly in this case study, it was seen that with the advent of COVID-19 some of the activities that were performed in the Square changed overtime where as some remained unchanged. However, a general deterioration of the urban space was witnessed.

Functions disturbed after COVID-19

A functional square is one with active participation of people in that space. The impact of this pandemic has not totally removed the public from the Square but has reduced the need of the space. Previously people used to come from neighboring shops, offices and institutes during their free time. The survey confirmed the absence of these activities and participation of the people in the Square post COVID-19. The absence of physical objects like benches, chairs, steps and plants is also responsible for reducing the number of people visiting the Square. Majority of the area is restricted from usage due to the presence of Punjab Assembly building at the rear end and the green area around the canopy cannot be accessed by public. The remaining area is not enough to hold big gatherings as social distance is to be maintained. Flexibility of space is also compromised due to absence of surfaces for sitting. The elements that make the public square more vital are not arranged and planned for. The pavements and sidewalks are not accessible for pedestrians. Furthermore, trees and shades are not enough for people to rest when required.

Previously, due to the prime location and presence of the Assembly building, this Square was the focal point of public gatherings and protests. People from various walks of life would gather here to raise their voices. Though there was no planned space and sitting areas to accommodate all the

Figures-7, 8 and 9: Different Views of the Charing Cross Square During the Pandemic.

people participating in the protests, but people gathered on the main road and blocked the traffic. Post COVID-19 pandemic, the restriction on public protests and the measures for maintaining social distance has brought this activity to an end. Today, the semicircular space opposite the marble pavilion created by M. Sullivan is used as a refuge space by few protestors. However, the space is quite minimal and cannot accommodate few people maintaining social distancing. The sidewalks are not accessible and the roads on both sides of the park holding the marble canopy are blocked due to security reasons, leaving little space for people to carry on social interactions (Figures 7, 8 and 9).

Thus, to facilitate public gatherings and interactions the adequate presence of street furniture is essential. Unfortunately, the Square does not hold these amenities to provide space for gatherings. The streetscape enhancement and openness is also an essential feature to be incorporated in the existing fabric, considering the recent pandemic situation in mind.

The study revealed that due to the strong character of the place, some of the features and characteristics were not disturbed. As mentioned previously, some of the road networks were already blocked due to security reason, after the pandemic people had further restrictions and faced problems due to blocked linkages. The functions related to the design were not supportive of the overall needs. Thus, safe and easy access to different public squares is very important along with maintaining social distance. Furthermore public amenities are absent from the square as there is no structure to be used in case of severe weather conditions. Also, the restrictions in pandemic have further limited the diversity of square. The overall environment is not friendly and welcoming. According to the current situation, there is need of improved planning and addition of infrastructure in the existing fabric, as evident through analysis present in Table 1, in order to make it a resilient space for public use.

Since the outbreak of the pandemic till date, no improvement has been made in the design of the square and no measures have been taken to improve its vitality. Some functions like public interaction with nature, the environment of the square, livable surroundings, local character and visual quality are still present, but many other factors related to social interaction have been lost. In addition, now people cannot find a defined place for protests and due to the fear of spread of virus, there is no planned way to carry on the activities.

Table-1: Assessment of Existing Situation of During Pandemic.

| Overall Relationship of Characters of Urban Squares After COVID-19		Response			Images of Site
		Strong Relation	Moderate Relation	Relation Lost	
Qualities of Public Square	Image Enclosure Linkages Connectivity Human Scale Legibility Coherence	✓✓	✓ ✓ ✓ ✓	 X X	
Design Elements	Public Amenities Sensory Experience Protection from Climate Local Character Maximum Diversity Public Friendly Design		 ✓	X X X X X	
Role of Stakeholders for Regulating the Space	Maintaining Design Mainitaining Utilities Improvement in Design		✓ ✓	 X	
Physical Comfort	Public Amenities Street Furniture Visual Quality Active and Passive Social Network		 ✓	X X X	
Safety Factor	Implementation of Rules Sense of Belonging Climate Protection Measures Measure for COVID-19 Spread		✓ ✓	 X X	
Activities and Experiences	Social Interaction Walkability Easy Accessibility Community and Civic Gatherings Public Protests		 ✓	X X X	
Urban Environment	Public Interaction with Each Other Public Connection with Nature Safe and Comfortable Environment Healthy and Livable Surroundings		 ✓ ✓ ✓	X	
New Design Measures	Maintaing Social Distance Street Furnitute Incorporation Marking Spaces for Sit ins Allocating Space for Protests			X X X X	
Strong Relation ✓ ✓		Moderate Relation ✓	Relation Lost X		
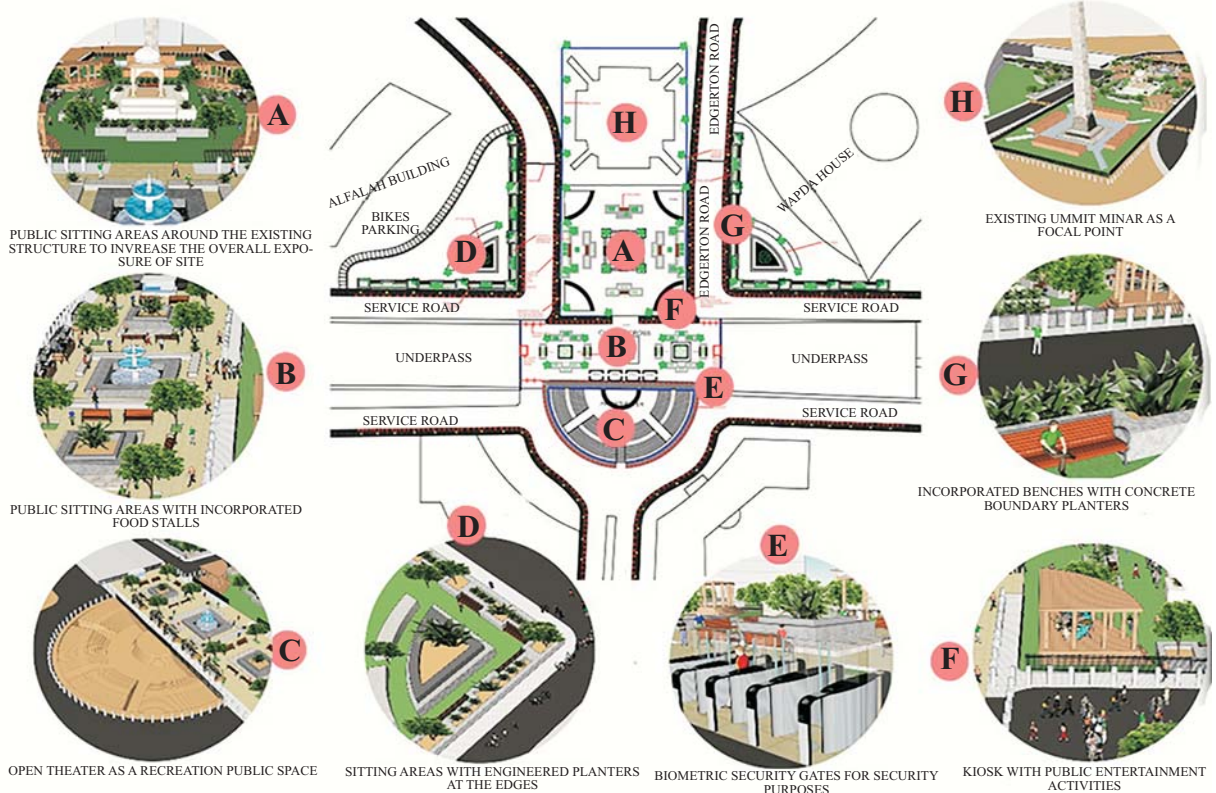
Figure-10: Views Outs of Proposed Design Layouts of the Square.

STRATEGIES FOR MAKING URBAN SPACES RESILIENT

Avoiding Dense Concentration of Public

Recent pandemic suggests change in design of public spaces. Previous design consideration for public square was based on public togetherness. For this purpose, the sitting areas and benches were planned around a focal point. The new design paradigm needs flexibility in design with a focus on scattered spaces. Thus, different platforms should be created and dispersed throughout the space to maintain social distance. This will help to prevent the spread of virus and people could get the chance to remove masks and enjoy the environment. Figure 10 shows how to achieve dispersed activities throughout the square, taking the case of Charing Cross, while avoiding dense concentration in one place.

Change in Design Strategies

In public squares, the change in design strategies should be pandemic resilient along with supporting their overall purpose. Scattered stalls and urban retreats focusing on small groups and allowing activities for individual use could be very helpful. Furthermore, different platforms with marked grids on ground to maintain social distancing is required. Along with creating social distance and scattered public platforms, the overall comfort of public is a priority and should be managed through design. With the incorporation of retreat spaces, the success of the space totally depends on environmental comfort and success of the space itself. The design should also ensure that the entry and exit spaces are wide enough to avoid crowding. The sidewalks and pavements should be widened. In addition, the planned system needs to provide choice in paths for safely circulating through spaces. While designing the spaces, another important consideration is maintaining safe distance throughout. The design should permit minimum physical distance between people and also between people surrounding structures. A proposed plan of the existing square and shows how to change the planning framework to achieve the desired results (Figure 10).

Separation and Segregation through Planning

The new system of separation is a big shift in design of public spaces. Public spaces which offer separation and

Avoiding Dense Concentration of Public	• By Practicing Social Distancing • Reminding by Sign Boards of "Social Distance" inscription • Marking Ground or Paths by Chalks for Maintaining Distance
Change in Design Strategies	• Individually Focused Urban Retreats • Environmental Comfort • Avoiding Crowd at Entrances and Exits • Widened Sidewalks and Pavements • Well-Spaced Built Structures
Separation and Segregation Through Planning	• Scattered Sitting Places • Small and Scattered Water Bodies Instead of One in Center • Scattered Platforms for Activities • Scattered Stalls with Marked Grids • Placing and Planning Soft Landscape to Maintain Distance
Integration of Physical Objects	• Incorporating Physical Barriers and Buffers • Use of Railings and Balustrades • Separation Through Lighting

segregation underpins the shifting paradigm in public space design. This shift in design will bring more sense of security in public as it will ensure less spread of disease. The idea of separation is kept flexible with an inclusive design approach. This can be achieved through designing scattered sitting places and water bodies (Figure 10, images A and B). Scattered food stalls and activity places can also be used for the overall design (Figure 10, image F). Adding soft landscaping and dispersed planters can play significant role to control the spread of disease. The placement of urban design elements according to proper planning can help in segregation of people and to achieve proper social distancing. Placing plants and soft landscape will enhance the visual experience along with providing buffers and separating spaces for users while maintaining social distance.

Integration of Physical Objects

The new norms of design of public spaces requires users and community to accept and incorporate new design parameters. Integrating different physical objects is a way to achieve the desired purpose. It allows more flexible spaces and prevents high risks of virus spread. Planned placement of planters, hedges, street furniture, lighting fixtures and sculptures can play significant role to maintain proper social distance and at the same time it can enhance the beauty of any public space. Figure 10 with images C, D, G and F illustrateS how planning and installing sitting space, planters, street furniture and different sculptures can help to make spaces pandemic resilient, without compromising the quality of space. The aim is to provide opportunities for people to come together in public spaces while keeping them a safe distance apart at the same time.

Table 2 summarizes a few recommendations towards this end.

CONCLUSIONS

The paper concludes with the finding that in the challenging times of COVID-19, the character and design of public space needs to be redefined. The designers can play a significant role in shaping the structure of urban spaces. As the image of a city is mainly dependent on the quality of its urban spaces, thus the success of these spaces is dependent on community participation and their connectedness. Public spaces create a network which strengthens the overall city's connections. Public spaces are the platforms for social interactions, exchange of ideas and facilities for political mobilization. Strong and healthy connection of a city's streets, squares and other public spaces are key consideration for a city's identity.

The results of this research show that public squares are not playing their role in the current context of Lahore and people are restricted to use such spaces due to fear of virus spread. People cannot gather for social interactions and protests which used to occur frequently at the Charing Cross previously. Lack of planning, street furniture and restricted zones do not allow public mobility. The public accessibility is further restricted by barriers.

To make public spaces lively and interactive, there is a need to design and plan these spaces considering the impact of a pandemic like COVID-19. The users of these spaces desire for areas to be healthy and of good quality. So the responsibilities of urban planners and designers towards spaces is remarkably increased.

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