

# Evaluating the leftover spaces beneath the flyover in Dhaka city: A proposed framework for spatial intervention

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## Abstract

In the recent decade, an alternate mobility component considered as one of the main solutions to cut back the traffic congestion for Dhaka city. Like burgeoning megacities, the rapid urbanization of Dhaka patronizes the evolve of the flyover as an emblem of progress and up-to-datedness. Usually, Flyover is perceived only as an object of mobility. Since the construction of the flyover has been widespread and additionally caused the development of ‘leftover spaces’ beneath it. This new reasonably kind of space is isolated, neglected, inaccessible, and purposeless though space includes a high impact on the city’s urban fabric. The rapid development of Flyover has placed an outsized quantity of shaded space and caused an amendment of streetscape beneath the flyover. This paper aims to analyze these ‘leftover spaces’ through a utilization perspective. Thus, this result's thought of as a methodological way to be generalized on the entire Dhaka community to develop spatial intervention framework significantly for the leftover spaces beneath flyover and, here Mayor Mohammad Hanif Flyover used a case study-based approach. Identifying the specific function and planning void is the outcome of this study. They will be beneficial to practicing architects, urban designers, urban planners, or relevant professionals.

**Keywords:** Space beneath the Flyover (SBF), Leftover Space (LS), Spatial Intervention Framework (SIF), Utilization of Space (UoS)

## 1.1 Context of Leftover Space utilization

Nowadays there are a lot of flyovers been built in the city to decrease traffic congestion on the road. The increasing number of populations in urban areas has increased the traffic flow on the road due to the tremendous use of vehicles every day.(Amanina Mohd Kassim & Mydin, 2019) Flyover development creates socially and economically inefficient spaces which need to be changed. Turning the leftover areas into productive spaces is no longer a new strategy rather a popular method and it has an immediate multiple social, economic, and environmental benefits. The query is how to utilize this sort of space and create such utilization framework for Dhaka. Social spaces, play spaces, shelter for the homeless, small series of interventions need to be addressed for the greater benefit of the urban space.

Community integration is an essential step for successful spatial planning. ‘Community is the expert’ to promote the social involvement in all of the development planning stages “Discovery, Planning, Design, Management, and Programming”.(Abd El Gawad, Al-Hagla, & Nassar, 2019) Since the flyovers are accountable for creating the community bifurcation impact. Utilization of leftover space has proved the qualitative enhancement of urban image where applied. Firstly, the paper investigates the predominant barriers to the utilization of space

beneath the flyover due to Dhaka’s complex socio-cultural and economic dynamics. The study will focus the issues related to space beneath the flyover into four major categories such socio-economic, socio-cultural, environmental, and planning issues. This paper investigates how to utilize the leftover spaces in the context of Dhaka.

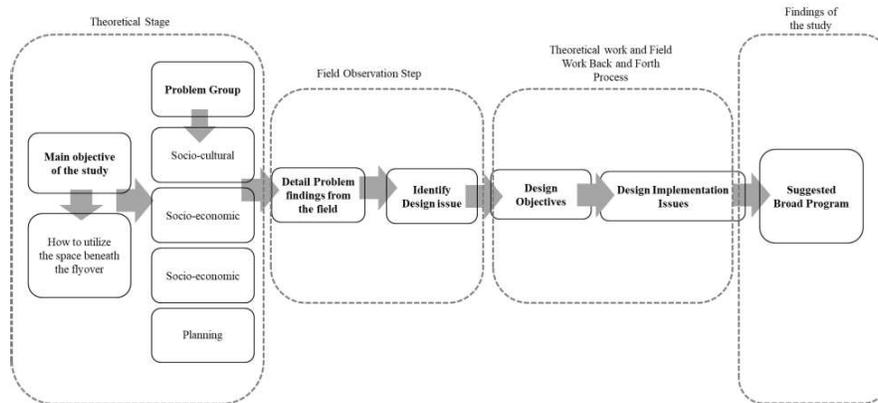


Figure 1 Spatial Intervention Framework Theoretical Approach

Secondly, findings from the field survey comprise analytical techniques such as, photograph analysis and from the on-site observations. Simultaneously, we have to keep in mind that, there is no best solution for design and planning. (Association, 2006)

### 2.1 Case Study of Leftover Spaces: Mayor Mohammad Hanif Flyover surroundings

Flyover beneath space needs to open up a little bit for city dwellers with small interventions and amenities. Therefore, very few works have been produced on the flyover phenomena in Dhaka. The existing works on flyover are mostly technical and are less of a spatial analysis (Kabir, 2014). The Mayor Mohammad Hanif Flyover popularly recognized as Jatrabari-Gulistan Flyover is an 11km long elevated Flyover having four lanes divided carriageway, starting at Palashi near Gulistan Junction and ending at Kutubkhali. The Jatrabari-Gulistan flyover is packed with greater characters than the other flyovers collectively in Dhaka. Currently, urban agglomeration of this space mushrooming informal vending opportunities.



Figure 1 Flyover Beneath Space at Mayor Mohammad Hanif Flyover, Photo: Author

To better understand the attribute of the space beneath this flyover, an attempt has been made to find out through observation and other analyzes with four major problem categories.

### **2.1 Socio-cultural Problems**

Flyover development is often severely criticized for no longer giving any advantage to the local community. For its physical attribute, it bifurcates the surrounding community. Although public spaces are often designed for certain activities, the existence of unplanned spaces and urban voids throughout the city offers an abundance of opportunities. (Kushwah & Rathi, 2017) The association of these spaces with illegality and criminality also extends to some cultural representations. (Harris, 2017) Currently, space is used for nearby commercial enterprise extension, political party office, and many more interventions made through the local muscle group. On the sociability level, they include parks, streets, and public green spaces, which no longer serve as a social place for the community (Abd El Gawad et al., 2019) The flyover beneath space is frequently submerged with political posters and advertisement cushions.

### **2.2 Socio-economic Problems**

The Flyover piers' size is sufficient to produce a visual barrier from one end of the street to the other. However, in practice, public space is a terrain of conflict and struggle between different functions and interests. (Prasetyo & Martin-Iverson, 2015) Due to property line adjustments, the location beneath the flyover has been a blessing for local street vending operators.

### **2.3 Environmental Problems**

The presence of a lot of noise and air pollution can be witnessed all of the time since this space beneath the flyover is in the middle of the road. Effects of air and sound pollution, or the forced segregation of people and neighborhoods on either side of the highway, are taken into account. (Graham, 2018) Most of the landmarks on the side of the street have been damaged as a result of the flyover construction, presenting an unpleasant scene. Since the island below the flyover is just filled with sand, the greenery that we usually notice on the island is also missing. The City Corporation is using the flyover beneath the spaces as a designated site for dumping waste, which is escalating the tragedy already been done. It is possible to design green spaces for the local community, as well as shelters for homeless people at night and creating pocket parks.

### **2.4 Planning Problems**

The flyover beneath space was a little more difficult to reach as a sociable space due to a lack of interaction and poor design. From the authority's viewpoint, the flyover is constructed just to provide mobility. The location of the flyover, and perhaps even the design and location of the pier, both heavily debated. The visual connection between one side of the road and the other was drastically disrupted when a massive column barrier was erected in the middle of a road. The benefits of the neighboring community were not considered in the design of the flyover. Although there is authority to collect tolls for the operation of the flyover, there is no planning for space beneath it. Since this flyover's facilities are all transportation-related, the complications that the space below is suffering are nothing more than planning failures.

## **3 Spatial intervention Framework**

The framework has been divided into major two parts, one is theoretical development-A and the other one is designed implementation method-B.

### 3.1 SIF-Theoretical Development-A

Table 1 Spatial Intervention Framework-Part-A-Theoretical Development

<b>Main Objectives</b>	<b>Problem Group</b>	<b>Detail problems found from the field</b>	<b>Design Issue</b>	<b>Design-Objective</b>
<b>Utilization of Space</b>	<b>Socio-cultural</b>	Bifurcating effect for its physical attribute. (Kabir, 2014)		Increase Accessibility
		Change Interaction between person and groups		
		Flyover has less connectivity with the local community.	Crime Preventing Mechanism	Increase Visibility
		Makeshift communal user group creates less impact on the area. Space beneath the Flyover is a victim of exploitation by the local muscle groups	Create Integrated Aisle	Ensure Safety and Security
	<b>Socio-economic</b>	Change of property line beneath the flyover hampers the business opportunity	Income-generating space	Self-sustainability
		Commercial visibility hampered due to pier and island of Flyover Encroachment competition between local muscle groups to get illegal subscriptions from vendors		
	<b>Environmental</b>	Space beneath the flyover become a major source of dust and odor pollution	Ensure a variety of functions	Mix use and forms
		Full of noise and vibration	Waste management facility	Equate Environment
		Lack of landscape beneath the flyover		
		Lack of community function and amenities	Create a buffer zone for the community	
<b>Planning</b>	Waste management missing space beneath the flyover			
	Flyover only perceived as an object of mobility	Provide community Interest	Sense of belongingness	
	Flyover development ignores the beneath space and its planning	Form a maintenance authority	Temporal Activity design	
	Community benefit is also ignored by the formal authority			

### 3.2 Design Implementation Method-B

Table 2 Spatial Intervention Framework-Part-B-Design Implementation

<b>Design Objective</b>	<b>Design Intervention Area</b>	<b>Suggested Broad Program</b>
Increase Accessibility(Handy, 2005)	Road Crossing Way	Provide foot over bridge/Underpass/Zebra crossing
	Identification of socially vulnerable spot	Provide Surveillance facility/Street lighting/Landscape light
	Meet the community Interest	Walking trail design/Newspapers Kiosks
	Income-generating space	Providing Bazar/Street Market/Tea stall/Night Shelter/Restaurant
Increase Visibility(Kamalipour & Peimani, 2019)	Reduce the air, noise, sound pollution	Create buffer from the road/Screen wall design
	Ensure maximum obstacle-free space Keep the space free from dumping or debris	Design with a transparent material or portable design solution Waste management facility design/waste bin or box design as a landscape element
Ensure Safety and Security(Francis, Giles-Corti, Wood, & Knuiman, 2012)	Fear of victimization/Create Surveillance	CC tv installation /street lighting/presence of law enforcement force
Self-sustainability(Kamalipour & Peimani, 2019)	Use of existing potentials	Rainwater harvesting from flyover
	Income-generating opportunity	Placing the wet market/street market/accommodating vendor with legal subscription
Mix use and forms(Amin, 2008)	Land-use allocation or Multipurpose use	Accommodate a variety of functions or creating a mixed functional state
Equate Environment(Minton, 2006)	Reduce noise and vibration	Buffer design element/Screen design/Plantation buffer/Noise-absorbing landscape design
	Odor-free environment	Waste management design
Sense of belongingness(Francis et al., 2012)	Attract the Child, Youth, and Elder Group of people	Children's play area/Street children school/Snacks and Coffeeshop/Walking trail design for elders
	Temporal Activity Design(Chace, Walsh, Cruz, Prather, & Swanson, 2003)	Time-based allocation

#### 4 The Outcome of the Study

The research will help the practicing architects, urban designers, urban planners, and relevant professionals. The spatial intervention will provide the opportunity to enhance the alternative image-making process for the city rather than only making physical structures.

#### 5 Conclusion

This article examined how often broad socio-cultural, economic, and planning factors may be used to develop a spatial intervention framework for the leftover spaces beneath the flyovers in Dhaka. This paper can give some functional guidelines for using the space below the flyover but at the same time, it must be admitted that it is not able to answer any in-depth functional critique. The paper was originally written for macro-scale intervention showing the broad path of micro-scale intervention but does not address it in detail. Finally, the paper will be beneficial to architects, urban designers, city authority stakeholders, planners, and other relevant professionals in the ongoing development of the city. In general, the formal authority for development should address the leftover spaces beneath the flyover. The space that is functioning like a burden for us today can be turned into an asset by enhancing its image for the entire city through effective use.

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