

# Utilizing Inoperative Spaces Effectively

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## ABSTRACT

Due to a lack of areas for socio-cultural conditioning, declining recreational opportunities, and environmental degradation, urban life is quickly becoming boring and unattractive. However, it is noted that, there are certain 'Urban Voids' amongst buildings, at street corners and so forth which are left over (unused) spaces.

'Urban Voids' can be defined as follows,

*"Spaces that have no function and are neglected, unutilized, under-utilized or abandoned land or areas and premises which exist in urban areas due to outdated or defunct uses".* (Omnia Mamdouh Hashem, 2022)

This paper is going to explain the concept of voids, identifying, and analyzing the type of voids, how these void spaces have great potential for turning into public spaces through place making process. This paper is going to focus on Infrastructural linear voids: spaces found underneath flyovers and their hidden potential which can help to improve the image of a city. Urban Infrastructural voids in Vadodara are identified and typologies are formed by observational and research-based studies. Based on the review of literature on public place making and analysis of nine case examples across the globe, the issues to be addressed are identified and landscape design recommendations are framed for the void space's underneath flyovers in the Indian context. This study seeks to address the problem of urban voids, one of the potential options for more associated spaces. The goal of Revitalizing urban void's is to reconnect these non-functioning spaces with context, achieve user's needs, integrate technologies with the space and increase its income through combining theoretical findings, empirical study, and questionnaires, which generate a framework that helps the planners and designers in developing urban voids and maximizing its efficiency. (Ranjitha Manibala. T, 2022)

**Keywords--** Urban Voids, Urban Infrastructure Void Spaces-Spaces Under The Flyover, Adaptability, Revitalize, Place-Making, Rehabilitation, Reviving Dead, Unutilized Spaces

## I. INTRODUCTION

Because city planning and design are done in isolation, the resulting public areas exhibit carelessness and poor opinions of the location. People frequently neglect these locations since they are being used ineffectively and assume that they are lifeless and dead. These urban voids are the result of ineffective decision-making, bad land management, and a lack of cooperation between designers and decision-makers, all of which could greatly enhance the area and build a stronger urban fabric for the city. (N., 2017)

In urban neighbourhoods, public space is crucial to the social life of the community. The social value of public space is broad and includes the contribution it makes to people's attachment to their neighbourhood, their memories and imaginings of place and identity, and the chances for interacting with others in a social setting. (Jonas, 2011) Such venues facilitate the interchange of ideas and talents, and hence play an important role in enabling social and cultural engagement and the development of community relations.

Surprisingly, when we look at a planned city, infrastructure needs can wind up being the cause of urban voids. For example, areas between highway and service road, areas below the flyover, and areas below foot over bridges are becoming dead or misspent due to superficial planning which clogs the experience of the habitants. We can see that, while urban gaps are generated by rapid growth, shared spaces are created by steady growth. As a result, old Indian towns have more communal places than more recent construction, which gives them a wealth of experience. (Gehl, 2013)

The voids beneath flyovers are highlighted in this article as a potential intervention venue for connecting people and boosting community development. We also propose techniques for revitalizing these voids to create public space based on local land use and perception.

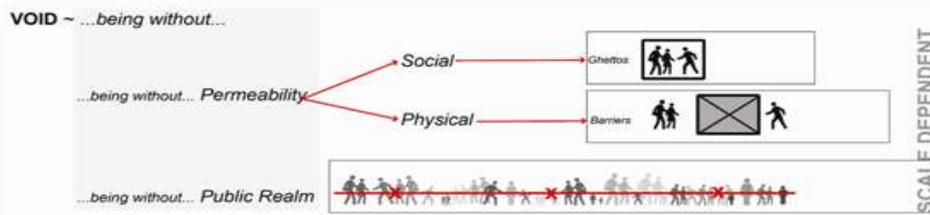


Figure 1: Defining void

Source: Urban Leftovers: Identifying and Harnessing their potential for the agenda 2030 in Malmö by Divya Kasarabada

## II. AIM AND OBJECTIVES

### 2.1 Aim

The purpose of this study is to explore the possibilities of vacant spaces caused by infrastructure voids in the context of the built environment. It will also emphasize the significance of urban voids as potential resources for investigating their environmental, social, economic, cultural, and aesthetic benefits.

### 2.2 Objectives

Identifying flyover spaces for adaptive use and reuse through place making strategies. Studying public

spaces and their constant need to cater social development and infrastructure and incorporate them under flyover spaces. Examining the aspects that affect and influence how well public places function and developing plans or suggestions to meet the demands that are unique to each setting. Through the safe rehabilitation of the areas beneath the flyovers, improve the links between nearby neighbourhoods. To give the city personality by creating the areas underneath the flyovers.

## III. METHODOLOGY AND ANALYSIS



Figure 2: Methodology table

Source: Authors

### 3.1 Literature Review

The mapping will aim to focus on the following criteria-

**Research Review** is conducted to create the framework for study of the spaces below flyover within urban fabric.

**Interviews and Surveys** were conducted based on age group, human activities, and existing land use.

**Link Analysis**- Arranging the layout of task/area to influence certain behaviors.

**Analyses based on Observation** - what are the activities prevailing in public space, reusable spaces under the flyover and what is the order in which they engage in

tasks.

**Design Suggestions**- after selecting site and site analysis proposals for designing the spaces under the flyover are given.

#### 3.1.1 Urban Voids and Place-making through Landscape

Voids are classified into three types based on their formation mechanisms: planning voids, functional voids, and geological voids. Edge and buffer voids, infrastructure voids, transportation voids, and large-scale open space reserves are referred to as the four primary categories of voids. This paper focuses on the voids

created by flyover in the city i.e., infrastructural void. (Trancik, 2020)

Place making refers to a synergetic process through which we might modify our public space to maximize shared value by strengthening the connection between people and the places they share. The ensuing approaches play a significant role in making the public places lively that can be extended to places underneath flyovers: (Kim, 2016)

- Improving the physical and emotional attachments of the citizens residing in that area.
- Community based revitalization established between local values, history, and culture.
- Interaction between physical elements and socio-cultural beliefs.

**3.2 Issues to be Addressed in Urban Void Spaces Underneath the Flyover**

**Table 1:** Issues which needs to be addressed underneath the flyover spaces

Source: Authors

Factor	Issues
Physical Factor Access Safety Structure	<ul style="list-style-type: none"> <li>• Spaces are surrounded by heavy traffic roads on all sides.</li> <li>• Loss in connection between areas.</li> <li>• Massive columns</li> <li>• Exposed Services.</li> </ul>
Human Activities	<ul style="list-style-type: none"> <li>• Illegal encroachments, Hawker's</li> <li>• Illegal parking</li> <li>• Rubbish dumps. Garbage disposal.</li> <li>• Hindrance in pedestrian movement</li> </ul>
Visual and Aesthetic	<ul style="list-style-type: none"> <li>• Linear urban void dividing city fabric.</li> <li>• A negative impact on the city's visual image.</li> <li>• It lowers the economic worth of existing homes/commercial complexes.</li> </ul>

**3.3 Research Methodology**

**3.3.1 Comparison of Case-Studies**

Source: Author

Sr. No.	Case Study	Issues	Solution	Shortcoming
1.	Ahmedabad IIM flyover under space	Prolonged traffic congestion	Entrance plaza, enclosed spaces under the flyover	
2.	Under the Flyover in Cairo, Egypt	Acts a giant scar	Outdoor activities like library, markets, playgrounds, art galleries, canteen, public spaces	
3.	A case of Matunga Flyover-Mumbai	Hangout zone for hawkers, gamblers, drug addicts, etc. and encroachers.	Walking-cum-jogging, ground lighting, plant along the walkways. Vegetation as and around focal points. Safety: CCTV cameras for safety. Limited access to the space. Use of bollards at the entrance. Grills at both the sides to ensure safety.	Lack of community-based revitalization.
4.	Under the JJ Flyover, Mumbai	Leftover spaces intersection, illegal encroachment by hawkers	Spaces for play area for kids, spaces for celebration, place for worship places, formalized spaces for hawkers	
5.	Veerannapalya flyover, Bengaluru	Garbage dumping	Open plazas, biophilic designs to create visibly greener spaces. Created garden. Painted the vertical elements. Basic landscaping done. Sculptures with wildlife theme. False ceiling with recycled material	Lack of safety
6.	Kathipara urban square, Chennai	No proper maintenance, dump yard, wild plants, and Illegal activities zone	Children's play area, parking lot, eating space, pathway, Bus stop and food court are located.	

## IV. RESULTS AND DISCUSSIONS

**Strategy 1:** Creating a new vehicular connection and strengthening existing connections between the identified urban void space and the contextual land use.

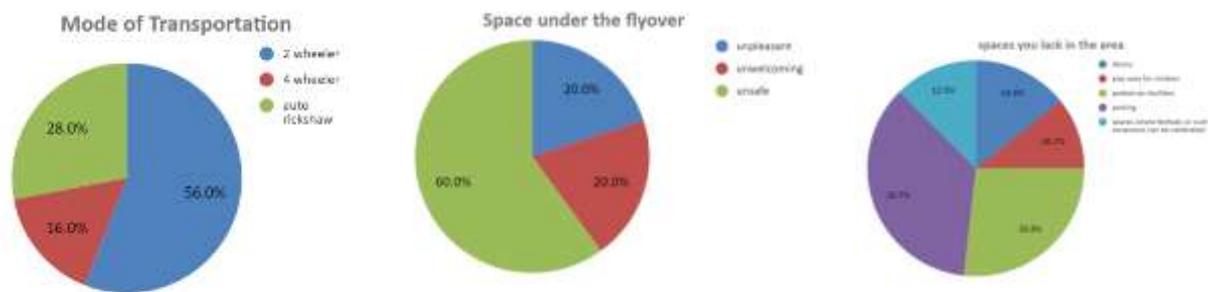
**Strategy 2:** Integrating new and old development while creating a green spine by providing

Cycling trails and shaded pedestrian path throughout the spine.

**Strategy 3:** Integrating the public transport with existing route.

**Strategy 4:** Creating co-housing and co-working mixed used typology spaces.

**Strategy 5:** Providing a multipurpose community space with amalgamation of all necessary function and a hub for gathering different communities in the vicinity.



**Figure 3:** Survey Analysis diagrams

**Source:** Authors

## V. CONCLUSION

Urban voids offer a great deal of potential to be used differently or converted for sustainable urban development. Maximizing land use effectiveness while maintaining a pleasant working environment is crucial. Every flypast must remove any undesired remaining spaces and must not produce a significant visual impediment that divides the neighbourhood. There are many instances where design and engineering are celebrated by producing modern urban sculptures that enhance the sense of location rather than take away from it.

According to the study, the following were essential for the effective re-use of urban voids:

Strong vision and all-encompassing urban voids development plans are required as part of integrated urban development initiatives.

- To create balance amongst all parties involved in the process, the public sector should connect all groups with one another and develop new policies.
- Supporting temporary uses, which are essential to the growth of cities because they may adapt requirements and capacities to resources.

At the end the paper concludes that innovative contextual strategies in Vadodara are needed for making the city dynamic and more beautiful. There is a suggested structure for an equivalent fabric that can be explained in detail and specifically contextualized for each metropolis. Urban gaps must be revitalized in order to create a holistic city with a variety of experiences, but

innovative ways must be devised. Environmental, social, cultural, aesthetic, and economic worth should all be considered when reviving these empty spaces. The research concludes that the effective re-use of spaces under the flyover can be designed as: Public parks, sit-outs, hubs for informal economic activity, paid parking, co-working spaces for students, Recreational areas, food hub, walking tracks, Rental shopping or informal markets, book stalls, public toilets and play area for children. The consideration of vertical structure and vegetation is necessary to improve the visual appeal. Utilising wall cladding to cover service pipelines, painting the vertical structure to reflect culture and context, and employing an advertising board or display space on the large flyover structure to take use of its exposure are some examples of creative wall design ideas. Primarily preferred are local species. In order to act as a noise and pollution buffer and to create an enclosed environment, native shrubs and trees will be planted densely along the length of the voids. To draw and fascinate visitors, native blooming plants should be put in the center layer, followed by grass or a lawn in the foreground. Bioswale along the outside of the bridge to catch water and runoff. For accessibility: Defined entrance with landscape elements; articulation of entry using creepers; speed breakers to reduce speed; pedestrian zebra crossing; having a maximum of two main entrances at opposite ends and one or two secondary entries at strategic locations. Pedestrian access of 2m width connecting the surrounding areas across the voids.



**Figure 4:** Proposed children play area  
Source: Author



**Figure 5:** Proposed accessibility recommendations  
Source: Author



**Figure 6:** Proposed public sit-out  
Source: Author



**Figure 7:** Proposed landscaping  
Source: Author

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