

Reviving the Dead Space Under Elevated Structure

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1. Abstract

At present, the degree of urbanization in most countries continues to increase, and elevated highways have become an important part of urban development. To alleviate traffic problems, many Indian municipal authorities have taken the initiative to construct flyovers at major intersections. Unfortunately, this has created serious problems in most cities, where an integrated planning approach has not been adopted in most cases, either due to a lack of funding or a lack of understanding of the planning perspective of these proposals. The sprawling infrastructure of these elevated highways fragments communities and creates unwanted spaces by easing traffic but isolating people. This study seeks answers on how to reprioritize the use of dead space under these structures, a way of understanding urban behavior while taming the negative impacts of these elevated highways to enable the use of space under the bridges, which must be planned and built, and neglect will lead to misuse of space, creating an unsanitary and disturbing environment. Based on case studies and examples, the study will develop clear guidelines to fill these urban gaps and explore design principles to create an inviting environment in the most unlikely spaces under the elevated freeway.

Keywords: elevated highway, urban remnant, dead space,

2. Introduction

Urban design is about creating connections between people and places. Movement and urban form, nature and built structures.

Urban Spaces brings together aspects of placemaking, environmental stewardship, social equity and economic viability to create places with a unique aesthetic and identity. Urban design involves the creation of place, that is, the creation of the environment that gives a sense of belonging to an area. This process is achieved by establishing recognizable neighborhoods, distinctive architecture, aesthetic public spaces, and recognizable landmarks and focal points.

2.1 Flyovers:

The space under the flyover is a bit contradictory. Elevated highways are meant to connect the gaps on both sides, connecting them, but they are often deliberately silent as barriers due to the problematic program space below them. There's a tendency to leave it underused and overgrown, or abandon it for occasional use like parking. But there are many creative solutions for managing spaces under elevated structures.

Space under elevated structures such as bridges or highways is often underutilized and can become a dead end in urban areas. These spaces are often neglected, leading to safety issues such as crime risks or collapse. However, there are innovative ways to revitalize these dead zones and turn them into functional and attractive areas that enhance surrounding communities. By combining features such as lighting, green spaces, sidewalks, public art, public seating and playgrounds, we can bring these once underused areas to life and create safer and more secure public spaces. more appealing to everyone.

The goal of revitalizing the dead space under the elevated structure is to transform the underutilized area into a functional and aesthetic public space that contributes to the wellbeing of the surrounding community. By revitalizing these spaces, we can create safer and more accessible areas for pedestrians and cyclists, reduce crime, and provide opportunities for community gatherings and events. Moreover, these spaces can contribute to the overall beautification of the urban landscape by reducing the number of unattractive and unused areas. Ultimately, our goal is to breathe new life into these underutilized spaces and improve the quality of life for those who live and work nearby.

2.2 Existing spaces

lowrise structures are in poor condition because they are not designated as use and are often overgrown or vacant to rot, resulting in:



- **Homeless encampments:** Many homeless people choose to live below decks, often using tents, blankets, and other materials to build temporary shelters.
- **Graffiti and Street Art:** Below the bridge you will often find graffiti artists and street art enthusiasts leaving their mark on the walls and pillars.
- **Encroachment by parking** providers/private individuals on illegally parked vehicles.
- **Dumping of garbage/construction waste** causing environmental damage to adjacent areas
- **Running and Cycling:** Many runners and cyclists use the space under bridges as part of their regular routes and take advantage of the paved and shaded areas.

Photography: Photographers often use the unique architecture and lighting below deck as a shooting scene.

- **Homeless Outreach:** Non-profit organizations and government agencies are known to reach out to homeless people below bridges, providing resources such as counseling, health care and food.
- **Unauthorized gatherings:** Unauthorized gatherings and gatherings may take place below decks by teenagers or young adults.
- **Demonstrations and Protests:** Bridges are convenient places of protest because of their visibility for traffic, media and public access.
- **Drug addiction and other illegal activities:** Under the supervision of the police, some people may use the area below deck to engage in illegal activities such as drug addiction or drug trafficking.

2.3 Existing improvements:

Greening and landscaping: Some cities have implemented greening measures to restore dead zones under flight paths by adding vegetation, trees, flowers and shrubs. Landscaping can play an important role in the beauty of the area and in creating a pleasant environment where people can relax and have fun.

Arts and culture: Some cities revitalize spaces through cultural activities such as art installations and graffiti. This can attract people to the area, making it a more lively and vibrant space.

Retail and food stalls: Some cities have started to open small retail and food stalls under the flights. It provides local vendors with an opportunity to sell their wares and also increases foot traffic in the area.

Lighting and security measures: Appropriate lighting and security measures must be in place to ensure the space is safe for people to use. Installing LED lights can make the area attractive and attractive.

2.4 Challenges associated with restoring dead space under the flybridge:

Limited space: The area under the flybridge is limited and may not be large enough for large scale development. This may limit the types of activities that can be implemented.

Maintenance Concerns: Maintaining a space can be quite a challenge. Spaces are exposed to pollution and other environmental factors, which can affect plants and other elements in the space.

Safety issue: Due to traffic and pollution, the space under the aircraft may not be safe. Appropriate security measures must be in place to ensure the safety of those using the space.

Legal ownership: Ownership of the space under the fly is often unclear.

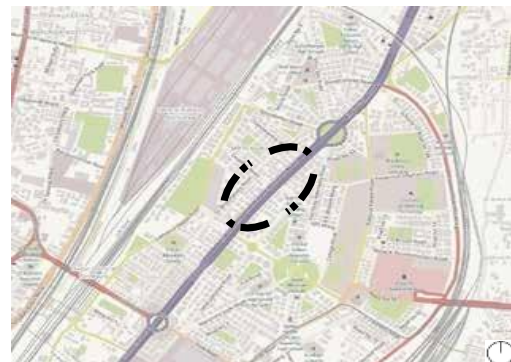
This can make it difficult to obtain permits and funding for improvement programs.

3.case study

3.1Net case study

Mumbai first park under the flyover

Nanalala D. Mehta garden



Location: Under Tulpule Flyover ,Matunga

Architect: Pallavi Doke

Features/induced activities

- A 600 m long walking/jogging track in the shape of the Narmada river, lined with plants and grass
- The base of the viaduct is illuminated along the path with appropriate LED lighting and ground lig

hting.

- 300 lights and 11 rotating CCTV cameras installed along the road section, as well as 24/7 security for security

Green lawns and beautiful flowers in the gardens make it the perfect place to relax amidst nature.

Nanlal D Mehta Gardens is a popular destination for people of all ages and is often crowded in the mornings and evenings. It is also used as a venue for various events including cultural programs, exhibitions and social gatherings.

All in all, Nanlal D Mehta Garden is a must visit for nature lovers and those looking for a peaceful place away from the hustle and bustle of city life.

The city that never sleeps has only a few colors - brown, black and gray are its usual hues - as concrete offers little or no greenery in Mumbai. But he may have been hanging out in Matunga for a while



Day view



Night view



Imagined by the group of inhabitants "One Matunga", the garden under the plane is designed to beautify the space and get rid of the many players who frequent the shops there. and underground activities. Mumbai has unveiled its dazzling new Sky Gardens, the first of their kind in the city. The brainchild of the One Matunga resident group, Garden Down Fly aims to beautify the space and get rid of as many people as possible

3.3. Atal setu , sports complex bridge ,Indore



The sports grounds under Atal Setu, developed by the Indore Development Authority in Pipliyahana, will provide various sports facilities to the people.

This complex will have roller skating, table tennis, football, hockey, basketball and many more sports, the use of this sports area will not only increase physical activity but also encourage our players .

The city's first smart bridge as it was built using modern technology for the construction of the viaduct.



The concept of the layout of the sports field under the flyover was introduced exclusively by IDA to optimize the use of the remaining space under the flyover.

3.4.Bengali square bridge, Indore –



vegetable market situated along the road at the Bengali square area has been shifted under the Bengali square bridge



DAY VIEW



NIGHT VIEW

3.4.1EXISTING VEEGTABLE MARKET

The wet market under the bridge is likely to be a busy market where vendors sell a variety of fresh vegetables, fruits and other goods.

The location below deck can provide a safe haven as well as sufficient space for vendors to set up their stalls and displays.

Customers visiting the market will be able to browse a variety of locally grown seasonal produce

The atmosphere will be lively and social, with vendors peddling their wares and customers haggling for the best prices.

Overall, the vegetable market under the bridge will be a unique and vibrant part of the community's food culture, providing access to fresh locals

3.4.2 Parking

Parking options under the Overpass Vegetable Market may vary depending on a variety of factors including location, time of day, day of the week, and events happening in the area.

In general, parking under the flybridge can be difficult due to limited space and low ground clearance. It can also expose the vehicle to dust, pollution and the risk of theft or vandalism.

For vegetable markets, parking may be limited as vendors and customers occupy most of the area. Customers may also need to haul their groceries some distance or park their vehicle further away and walk to the market.

At peak times or on weekends, parking can be more difficult due to heavy vehicle and pedestrian traffic, leading to traffic jams and longer wait times. Some people may choose other means of transport or park their vehicle elsewhere and take public transport to get to the market.

Parking under the flyover wet market can be tricky in general, but good planning and patience can help minimize the inconvenience.

3.4.3 From an architectural point of view, the construction of a vegetable market under the bridge has both advantages and disadvantages.

Advantages:

- **Convenient transportation:** Since the market is located under the bridge, it is very convenient for people to travel to get out of work and buy vegetables from the market.
- **Good value for money:** A location under a bridge can lead to lower rents for traders, which translates into lower prices for customers.

- **Protection from the weather:** The market will be protected from direct sunlight, rain or bad weather.

Disadvantages:

- **Traffic Congestion:** The establishment of such a market could lead to severe traffic jams in the area, especially during peak hours.
- **Sanitation Issues:** Markets typically generate a large amount of waste, which is difficult to properly dispose of in a timely manner, resulting in an unsanitary environment.
- **Noise Pollution:** Since the market will be located directly under the bridge, noise levels are likely to increase significantly, causing disruption to nearby residents and Commuters .

4.Recommendations**4.1Here are some suggestions for rehabilitating under elevated structures:**

- 1. Conduct a Feasibility Study:** Before undertaking any renovation project, a feasibility study should be conducted to determine potential uses , costs and associated challenges of space.
- 2. Involve the community:** Involve the local community in the renovation process, from the initial planning stages to the final design. This not only ensures that the project meets the needs and aspirations of the community, but also facilitates purchase and supports the long-term sustainability of the space.
- 3. Emphasize safety and accessibility:** Dead spaces are often associated with crime and unsafe conditions. Designs should prioritize safety by ensuring adequate lighting, clear sightlines and the use of durable, easy maintain materials. Accessibility should also be considered by providing ramps and lifts that allow people with disabilities to use the space.

4. Choose the right plan: It is important to choose the right plan for the space, taking into account the demographics and preferences of the surrounding community. Common programming options include public art installations, food and beverage kiosks, outdoor seating areas, and entertainment.

5. Incorporate sustainable design elements: Retrofitting dead zones under elevated structures is an opportunity to incorporate sustainable design elements such as rainwater harvesting, green walls and solar panels which help to the environmental health of the surrounding community.

4.2 some ideas for bringing dead space back to life:

Urban Gardens: Create vertical gardens, planters and hydroponic systems that use the space to grow fresh produce. Urban gardens not only enhance the aesthetics of the area, but also provide healthy food for community members.

Art Installations: Turn spaces into canvases for local artists to create murals, sculptures and installations. Art installations can promote a sense of community and reflect local culture.

Pedestrian and Bicycle Pathways: Create safe and convenient pathways for pedestrians and cyclists through the area. These roads can encourage active traffic, reduce congestion and promote healthier lifestyle

Outdoor Recreation: Develop outdoor recreation facilities such as basketball courts, skateboard courts and amphitheatres. These facilities will provide community members with the opportunity to participate in physical activities while enjoying the outdoors.

Hybrid Commercial Spaces: Create commercial spaces such as cafes, shops, and galleries that blend seamlessly into the environment. These hybrid spaces can foster local businesses and promote economic growth in the region.

under the overpasses can be redeveloped into vibrant public spaces that enhance the beauty of the area while providing community members with opportunities for healthy living, social interaction and economic growth.

5. Conclusion

The revitalization of dead space under Elevated Structure is an opportunity to create valuable community spaces that can positively impact the wellbeing of people and the surrounding environment. With proper planning, community engagement and sustainable design, these spaces can be transformed into vibrant destinations that provide recreational and cultural opportunities for local residents and visitors. The combination of thoughtful design elements that prioritize safety, accessibility, and planning that reflects community needs and aspirations can create an area that benefits everyone. By revitalizing these once forgotten spaces, we can create a more vibrant and connected community that enriches the lives of individuals and the wider community.