

Chapter 3

Architectural Rehabilitation of Urban Voids in Bengaluru

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Introduction

The growth and development of any country is largely dependent on the public facilities such as Roads and road networks, Sanitation and Water Supply, Smooth running of Vehicular and Pedestrian Traffic and others that all come under the large umbrella of Infrastructure. A good Infrastructure system is a very integral part of making a country run smoothly. Infrastructure forms the backbone of any modern developed and civilised functioning society. Be it connectivity, migration or climate change, infrastructure touches every aspect of human life. Infrastructure has the ability to inter connect systems with great potential that help drive progress of the country it serves toward globally recognized goals. With good infrastructure the population of a country develops and so does its economy.

Bharat or India, as the world is more familiar with has been one of the first ever mass of land to be civilized. Agrarian by nature, the country has seen very many ups and downs throughout history. Migrations and Invasions have both led the country to become what She is today. What we were able to salvage after all the migrations, invasive or welcomed saw her in a vulnerable condition. India, what She is today is a strong developing nation with a promising future seeing immense development in the infrastructure sector. Her cities today are seeing excellent road networks, connectivity, mass transit transport systems, water and sanitation systems, et al. Our goals as a nation to become a developed country begins with this superior infrastructure progress.



Fig 1. Delhi-Meerut Expressway, the widest expressway in India with 14 lanes

Having said this, all this Infrastructure development has led to a few unwanted ramifications. Urban densification is another major vexation one would observe due to the job opportunities and overall urbanization that has not been spread out but has concentrated in the cities. Places such as Bengaluru, Hyderabad, Noida, Gurgaon, et al have seen an exorbitant increase in job opportunities and a “better life”, due to the Information Technology and Business Technology sector becoming more corporate in nature. With this one sees an influx of population trained to be a part of these sectors. These cities have seen an extensive increase in migration in the past 15-20 years due to the same. According to a census done in 2011 on the migration of outsiders in Bengaluru, out of 10 people, 4 people were not localities. [Hindustan Times,5.5.2024] making 42.12% of the population non Bengalurians. Provision of infrastructure to accommodate this population has led to the increase in Urban densification and Sprawling.

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Fig 2. Sad state of Bhadrappa Layout Flyover on ORR

A very noticeable problem seen when cities are often being designed and planned is isolation of the problem that needs to be solved or the focal point only on this one problem, for example heavy vehicular traffic leading to and from IT parks especially during peak hours and how one needs to reduce. A futuristic approach needs to be studied, understood and re designed as an application where the solutions must see a bigger picture in the development of the Urban Landscape and must not be the only highlight of it. During the construction process of these beautiful and magnanimous structures, that may be the need of the hour, the urban developers must find a holistic approach to the same. Focusing on our research topic, highlighting elevated roadways within a city, the developers tend to completely lose focus on the voids they create in the bargain below these elevated roads.

These spaces are completely ignored or not taken into consideration during the planning and execution of developing the elevated roads and therefore lead to them becoming lamented, grotesque, urban spaces completely in juxtaposition to what is above them. Urban voids tend to become a negative space within the cities. Decision making that is inefficient, land management and coordination that is very poor among decision makers and designers are the reasons for the auto-creation of these voids.

AIM AND OBJECTIVES:

This research paper aims to identify three major elevated roads that are in parts of the city of Bengaluru that hold high value of real estate. Data that clearly provides proof that these roads have been able to reduce the congestion of traffic especially during peak hours to a large extent, but in the bargain have also created unpleasant and un aesthetic spaces which also are of high real estate value. The current situation of these spaces shall be identified in terms of quantifiable data that analyses the real estate value of the space itself and also the surrounding locality. It will also identify the potential and capacity of the same space if and when given an infrastructural facelift. It will also identify the dimensions of these spaces, the approach to and from these spaces. The defoliated spaces have become domains for frequent places of business for the underbelly of the society. The increased rate in crime, prostitution, drug trafficking, human trafficking, et al that is running smoothly due to the availability of these dingy and dark areas will also be identified in this research paper.

The research will also look into four case studies that may become potential applicatory solutions for this problem. Two of these shall be Indian based and two shall be International. These case studies will provide a clarity on understanding how these spaces were recognized for potential and how they were diverted into becoming spaces of aesthetics and functionality. The research will finally also give potential solutions for the spaces below the three identified elevated roads in Bengaluru based on the case studies done.

METHODOLOGY:

Problem Definition: Identification and Clarity of understanding and defining what the issues are when Urban Voids in the form of Empty Desolate spaces under elevated road networks create not only for that particular space on a micro level but also on a macro level for the place making conceptualization of the city.

Literature Case Study: This research aims to identify and study two literature case studies; both these case studies have identified these urban voids as potential usable spaces for the citizens of the city. The case studies that this research paper has identified are The Senapati Bapat Marg Flyover in Mumbai, India and The Bentaway in Toronto, Canada. Both these case studies will be analyzed as before and after scenarios in terms of aesthetics and functionality.

Identification and Application in Bengaluru: Three flyovers have been recognized in Bengaluru that are currently in an abysmal state of affairs. These flyovers are some of the busiest during peak hours and were of utmost need for the traffic situation in Bengaluru. However, as identified in the research have led to some of the most egregious and abominable spaces right under these very spaces. The focus is also on identifying their real estate value and thus pin pointing the lack of focus of the Government bodies that take care of the construction of these elevated roads.

DEFINITION:

The elevated road networks and flyovers which provide as connectivity elements for vehicular traffic within the cities have provided the cities with infrastructure that is not only of utmost need for the growing population in these urban districts but they have also resulted in Urban Voids of Egregious nature.

What is an Urban Void?

Merriam-Webster's dictionary defines the word Void in the following ways:

- 1.Void means "nothing contained," "vacant space," "not used," "not occupied." "The quality or state of stand without anything."
- 2.Gaps are a "split in space," a crack in continuity.
- 3.Lost is described as "hidden or neglected during a process or operation," not given use of, "and" actually or spiritually damaged or destroyed.
- 4.Leftover described as "something that still exists and stays unused."

Merriam Webster, U.S.; Revised edition (1 May 2022)

One of the first authors to write about Urban Voids was Jane Jacobs in her book titled 'The Death and Life of Great American Cities' in the Chapter 'Curse of Border Vacuums'. She defined these spaces as spaces within a city who have not yet been assigned any functionality or purpose. They have come into the picture as a result of other functional urban development and themselves hold no useful meaning. These are barren, desolate and egregious in nature. According to many academicians all around the world such as Abraham and Ariela (2010), these voids are spaces that are found outside of common urban peripheries or borders, Narayanan (2012) defines urban voids as spaces without "permeability" and "public realm," and Jonas & Rahmann (2015) view urban voids as both gaps and leftover buffer zones in a city. They do not have any functions or boundaries. They are viewed as unsafe and are also home to illegal activities.

There is a very huge potential to improve these spaces by making them usable, thus creating an urban fabric that is strong in a holistic way. Infrastructural facelifts in the form of interactive and transition-oriented landscapes that become spaces of public gathering, pocket sized parks and plazas, new age media creation/content creation spaces that not only will make these urban landscapes wholesome as far as Urban Design is concerned but will also act as a full stop to the urban planning negativities that these voids have become, a space where the underbelly of the society is both sprawling and spawning in the bargain.

We are all very much aware of how the real estate prices are sky rocketing every year in these cities. There is no difference between the value of these spaces above or below these elevated road networks. The land in these very cities are not only scarce but their economic value is becoming more and more dear by the day. The notified market value of the Lands adjacent to Hebbal flyover ranges between Indian Rupees 60,000 and Rupees 1,40,000 per square meter. These are the Notified Guideline Values of Properties in Bangalore Urban District, as Notified by the Department of Stamps and Registration, Government of Karnataka, published in the Karnataka Gazette, dated September 23, 2023. However, an additional 40-60% will always be charged by the property owners as real estate markets in India provide for the market values to be more than the notified guideline values.

Due to the application of two dimensional plans into execution without understating or considering requirements and experiences of the citizens who will not only be using these elevated road networks but will also be exposed to the voids created below. Smart and strategized placemaking have the ability to turn these voids into spaces of public usage within these cities.

CASE STUDIES:

This research has identified two case studies that are literature based in order to further understand the ways in which the urban voids created due to Urban development have later been treated in order to become aesthetically pleasing and functional spaces.

CASE STUDY 1: One Green Mile, Mumbai, India.

Location: Senapati Bapat Marg, below Elphinstone Flyover, Dadar West, Lower Parel, Mumbai, Maharashtra

Area: 1.8 kilometers

Architects: MVRDV Studio, Rotterdam along with Urban Designers StudioPOD

The Senapati Bapat Marg flyover is one section of a network of primary roads spanning more than 11 kilometres across central Mumbai. Parel, which is a mixed-use hub of residential, commercial and corporate establishments sees heavy vehicular and pedestrian traffic in these areas. This infrastructure contributes substantially to noise pollution and acts as a physical divide, constraining mobility between adjacent neighbourhoods in Parel on either side of this flyover.

Mumbai had to grow vertically with multi-storied skyscrapers becoming the need and norm of the city planning. The lack of space in Mumbai, and the overbearing population which increases on a daily basis has led to making the city congested. The people of Mumbai, due to lack of open and interactive spaces tend to seek spaces outside the city for leisure. This may not be an economically viable option for all the people living in Mumbai. The city planners owe it to their citizens to provide places of leisure within the city as well. Spaces as simple as parks and play areas designed well and safe also increase the value of place making of a city. Taking this concept and applying it to the voids created by the Senapathi Bapat Marg Flyover under its belly, the urban planners StudioPOD in collaboration with MVRDV Architects have created The One Green Mile.

The design creates 3D spatial experiences to look like a hilly landscape. The graphics and colours used in the designs create a space that is dynamic and visually aesthetic. A number of diverse spaces that accommodate interests of people from all ages and walks of life. Areas allowing older and pregnant women to lounge, an area dedicated to physical exercise, shaded seating areas for people to just rest as they are rushing to and from their respective duties, a simple area for performances as Mumbai is the entertainment capital of India, and also quite cosy nooks for anyone who wants to read.

Mitigation of the negative impacts of the construction of the flyover and also the lack of and hence a dire need of open green spaces that become parcels of community mingling was the idea behind creation of One Green Mile. Green elements have been included in the design in unique and innovative ways. Native plants and vegetation that require very less maintenance have been used as landscape elements. The choice of these plants was made with careful considerations such as absorption of carbon di oxide and other toxic gases that are a result of heavy traffic movement around and above the flyover. A succession of screens, and archways at the entry, and planters incorporated within retaining walls not only makes it aesthetically and functionally pleasing but has in a span of few months been able to foster biodiverse flora and fauna which is flourishing.

Mumbai is a city where walkability is high. Due to space constraints the use of private vehicles is far lesser than the use of mass transit transportation. But the city itself doesn't provide many spaces that are walkable due to bad planning and ignorance of urban voids. However, StudioPOD used this concept as one of the strategies for their design of One Green Mile. The citizens are able to walk along and inside this 1.8 kilometre long transitional/interactive space very comfortably. The access to and from this space has also been largely thought of as crossing roads in Mumbai is another challenge. Oversized Zebra Crossing strips were installed noting down this challenge and thus making the accessibility better. A seamless mobility network has been created and executed to accommodate both pedestrians and bicycle riders for the same. Dedicated lanes for bicycling have been put in place to also encourage the concept of using bicycles as a mode of transport. Plenty of different styled seating areas have been designed and incorporated within the design. Soft and hard paving have been intelligently used to enhance the aesthetics of the entire space.

The children's play areas encourage children to be active and explore games. One of the concepts known to most place makers is that if you design a space aesthetic enough to accommodate a functionality, people will use it. Outdoor play time has become more enjoyable for children who are residents of Lower Parel due to One Green Mile. With one of the user groups being children, safety comes as a prerequisite. A vulnerable stratum of the society that requires a little more help with safety, care has been taken to keep the entire strip of development well lit. The lighting scheme not only functions *prima facie* but also along with the elements of the hardscape increases the aesthetic value of the space.

One Green mile embodies the principles of a circular economy; By making use of the space below, the flyover itself gains added value. Apart from its primary function of transporting cars, it takes on a new role as a sheltered, actively used public space. With its emphasis on shaded and inclusive green public areas, One Green Mile could be replicated in other parts of the city with ease.

One Green mile instantiates the process of design and execution of streets that focus on inclusivity and public usage amidst the bustling streets of Mumbai. A public-private partnership (PPP) venture that has been successful at this venture.

The primary objective of this project was the creation of streets that prioritise the comforts of the people, enhance accessibility, achieve equity and inclusivity and also be a place of leisure. Rectification of vehicular and pedestrian traffic making the space safe and enjoyable for people walking or cycling.

Micro-destination has been incorporated at well recognised points under the flyover as pocket plazas and pocket arenas. The One Green Mile Project has planted 130 trees, installed 5 new bus stops, designed a beautiful 1.8 km long public utility space and reclaimed 2.3 acres of public space and improved the life of about 150,000 commuters. Through an ambidextrous collaboration, the dark and unwelcoming under flyover space has transformed into the coveted 'Parel Baug' of the area which has now become a public space that thrives because of its programmed play spaces, study centre and community spaces.



Fig 3. Before and After images of the One Green Mile Project

CASE STUDY 2: The Bentway, Toronto, Canada.

Location: The Bentways, Gardiner Expressway, Toronto.

Area: 1.75 kilometers

Architects: Urbanist Ken Greenberg and Landscape Architecture firm PUBLIC WORK

The Gardiner Expressway is 18 kilometres long. It is both at-grade (ground level) and elevated (above ground level) roadway that extend from Highway 427 in the west to Logan Avenue on the East. The at-grade section of the road includes a number of infrastructural elements such as bridges, retaining walls and culverts adding up to a total of 32. The elevated section is 7 kilometres long. This stretch includes a total of 17 on and off ramps. The structure is supported by 335 beams also known as spans and 334 supportive concrete columns also known as bents. Built with new age technology and maintained well, this expressway has proven to be Toronto's infrastructural support for many years now connecting many neighbourhoods and making life of people using these neighbourhoods as smooth as possible for their commute to and from the main Central Business Districts.

Beneath the 7 kilometres of elevated highway, is a 1.75 kilometre stretch of area that has been converted into a lively public destination, called 'The Bentway'. The versatile area showcases Toronto's distinct creative vitality, demonstrating how repurposing infrastructure can foster innovative forms of public engagement. The Bentway project begins from Strachan Avenue to the west and goes all the way up to Spadina Avenue to the East. The trail is used as a network that connects seven downtown neighbourhoods; Exhibition place, Liberty Village, Niagara, Fort York neighbourhood, Bathurst Quay, Wellington Place and City Place.

Lake Ontario was an important junction for the Indigenous people of this land such as the Mississauga of the Credit, the Huron Wendat, The Metis and other indigenous natives alike. who practiced trade, hunting and gathering on these lands. Taking this into consideration, The Bentway has done justice in paying its respects to the same. The Bentway Conservancy is a non-for-profit organisation which helps in the operation and maintenance of The Bentway. The organisation has seen to it that this project includes the whole city, along with all the surrounding neighbourhoods by utilising it for maximum engagement by the public. Innovation, safety, accessibility and fiscal sustainability are some of the top priorities of this organisation.

Our research observes the need for rectification or amelioration of the problems created by the construction of the expressways. One of the main issues seen in the case of Gardiner Expressways was the drainage from the overpass road network. As a result of this soil and groundwater contamination was seen from metals and inorganics. Risk management was required to deal with the same. The proposed refurbishment of the 1.75-kilometre space below that would include parks, landscaped areas, skateboard surfaces and public walking and bicycling areas. The remediation of the soil and ground water has been taken care of with utmost care and has been maintained well.

The project received funding through a public-private collaboration between the City of Toronto and philanthropists Judy and Wilmot Matthews, who generously donated \$25 million to the initiative. Motivated by the visionary ideas of urbanist Ken Greenberg and landscape architecture firm PUBLIC WORK to transform the expressway, which has historically been seen as a symbol of divisive 20th-century transportation planning, into an innovative model of inclusive public space, enriched by diverse year-round activities, Judy and Wil were inspired and involved in the project monetarily and creatively.

The Bentway facilities include various gardens, a skate trail, recreational amenities, space for potential markets, public art and spaces for festivals and other public events¹⁸. Some of the features include a walkway with selective plantings, a staircase that doubles as seating for an outdoor theatre and a wider path for cyclists, skaters and joggers. The Bentway project is based on adaptive reuse while tying together the existing architectural elements, like the 5-storey high pillars.

PUBLIC WORK's design approach centred on the Gardiner Expressway's array of supportive concrete columns known as "bents," which can operate collectively or independently to accommodate a wide spectrum of activities and events. These spaces range from tranquil and reflective areas to vibrant hubs and marketplaces. The expressway serves as a canopy, varying in height from intimate to a striking 15 meters, while the bents provide essential structural support for fixtures such as clamps, cables, power, and lighting. These features are tailored to cater to the needs of both large-scale performances and more intimate productions. On the ground level, the project seamlessly integrates public and private land, manages stormwater, and repurposes excavated soil to shape a new landscape.

Guests enter The Bentway at Strachan Gate through an open-air amphitheatre, featuring amenities like washrooms and a green room, as well as seating for approximately 250 individuals on bleachers. Performances can be enjoyed in this space or on an adjoining lawn capable of accommodating an additional 500 people. Positioned in front of the Fort York Visitor Centre is a cedar "wharf," providing another venue for events. Adjacent to this area is a "liquid landscape" featuring indigenous grasses, nourished by stormwater runoff from the roadway above via a sustainable and meticulously planned drainage system. The 220-meter skate trail, inaugurated in January 2018, transforms into a pathway featuring a children's splash pad during the summer months.

The design and activities at The Bentway are deeply connected to its location, drawing inspiration from its architectural landscape and the rich historical and future possibilities of the area. The unique experiences offered at The Bentway are exclusive to this setting. Extensive input from local residents and various potential user groups guided PUBLIC WORK's development of the physical space and its programming. Now, these ideas are being actualized by The Bentway Conservancy, a newly established non-profit organization responsible for managing, operating, and curating the space.



Open-air amphitheatre, Splash pad for kids, Performance area

Fig 4. Images of The Bentway.

ANALYSIS BASED ON THE CASE STUDIES:

- Both Toronto and Mumbai are cities that are already established infrastructurally. Data and its analysis proves that both cities changed over time infrastructurally in order to accommodate for the growth and for the future growth of the population of both the cities.
- Drawing to the similarity of Bengaluru, both these cities have seen migration of people into the city due to the job opportunities.
- These cities may not have originally been ready to accommodate the population that it holds today but slowly adapted itself infrastructurally to do the same.
- The flyovers and expressways were put in place for the very same reason and the realisation of the big ugly voids under these expressways and flyovers is an eyesore and a dark spot in planning.
- Upon realisation of the same, they have tried to mend this issue by creating usable spaces under these flyovers. Both cities have realised that not only does an expressway or elevated roadway help develop a city but also what goes on beneath it makes a huge difference.
- Treating these spaces as a new project and making them usable and aesthetic spaces has made the cities a good example to follow.
- The real estate prices in and around both these flyovers has drastically increased after the development of the spaces below both these elevated roadways.
- Recognition of the issue and resolving it in a well organised and planned manner has been very beneficial to both Mumbai and Toronto neighbourhoods around the One Green Mile Project and The Bentway respectively.

IDENTIFICATION AND APPLICATION IN BENGALURU:

The growth of Bengaluru is very apparent from its infrastructure development and growth.

- Bengaluru also is going through a similar situation just like the observations made in both the case studies. Urban developers are becoming aware of the fact that the elevated roadways and expressways have abundantly helped in improving traffic conditions of the city but have left huge ugly voids below them.
- The “planned” urban development has accommodated the vehicular traffic and the pedestrian traffic and the execution on land looks promising, but brown fields, voids, lacunae et al are still the terms we would use to explain the spaces below them.
- There is a dire need for a change in the way this planning needs to be taken forward by the local Government bodies.
- Repeatedly separating the two spaces, one above and the other below the expressways is leading to more and increased issues of Urban design and Planning.

PROPOSED STRATEGIES:

- This research has identified three major expressways or flyovers within the city of Bengaluru which may benefit from an Infrastructural facelift below these spaces.

- The research has thrown light that there is scope for place making strategies by Urban Planners and Designers.
- For the purpose of this research, we have identified three flyovers with high real estate values in Bengaluru.
- We have analysed the spaces based on user groups, area usage, land use, et al.
- We have collected data and analysed the same to propose design strategies that will help improve these spaces in terms of aesthetics, functionality, economics and value.

HEBBAL FLYOVER:

BACKGROUND:

The Hebbal Flyover which was inaugurated in the year 2003, served its purpose well as a solution for the traffic woes that had escalated over the years due to the infrastructure development required to cater to the Information Technology and Business Technology sectors. Functionality and Aesthetics both were taken care of and catered to during the process of designing this flyover that needed to integrate traffic patterns in a sophisticated manner in order to minimise the traffic congestion.

This elevated road network has been able to alleviate traffic impact on the ground but has also been able to create a space below and around it to be utilised. It has been a strategic component for the transportation network of Bengaluru. The diverse needs of commuters around the Hebbal flyover find it to be an optimizing and efficient transit within the city.

An analysis of scrupulous nature has been done on the traffic patterns in the areas surrounding the Hebbal flyover. Data has been collected and understood that high volumes of traffic which has built up over the years needs to be taken care of by placement of entry and exit points taking into consideration smart strategies and the need for multiple lanes. This has tried to make this flyover one that allows efficient and smooth flow of traffic most times of the day.

OBSERVATIONS:

VISUAL STATE OF THE SPACE:

- Our research was based on recognising flyovers that are important to the cities smooth flow of traffic and have done well so far but have also created spaces below and around them.
- Currently what one sees is the dilapidated state of what lies beneath the Hebbal flyover. It clearly shows poor judgement in planning and execution of the construction of the flyover. Even though it started off as a project that allowed for helping the dire condition of Bengaluru traffic, and the project by itself works for that purpose, the voids and grey fields it has left underneath is extremely worrisome.
- The space beneath the flyover is in a very dilapidated and abysmal condition. Not only is it left behind in a state of absolute chaos containing construction debris that has been sitting there from 2003 but every day debris in the form of garbage is being added to it on a daily basis.
- It has by default become an informal space for many numbers for things. A bus stop that has become so due to lack of a bus stop in the vicinity, a place of business for push cart hawkers' and food vendors and a traffic police station again due to the lack of a formal police station and ironically also sees crime in the form of prostitution, theft and drug trafficking.
- Hence what one can conclude with is the fact that even though this elevated road has helped in solving one issue of urbanisation, which is smooth flow of traffic that are connecting neighbourhoods and areas in Bengaluru, it has nonetheless created a new problem in the form of Urban Voids.

FISCAL STATE OF THE SPACE:

As per the government notified value, in the case of Bengaluru-The Bangalore Development Authority [BDA], the value of the area will be anywhere in between ₹ 60,000 to ₹1,80,000 per square meter. This amount has become a daily fiscal loss for the government.

SPATIAL SCOPE:

- Approximately 1 km of linear space and about 150 m of width is clearly available for urban development.

RECOMMENDED DESIGN AND PLANNING STRATEGIES:

The flyover has already created a dilapidated state underneath by becoming a grey field. However smart and strategic solutions that can be applied simply may be helpful in resolving the above-mentioned issues. The local authorities must work in collaboration with private firms who venture into urban development projects. A sense of place making must be applied where the current users such as the hawkers, traffic police, commuters taking the bus route from underneath this space and food carts must become a part of the landscape below the flyover therefore not being completely suspended or must be rehabilitated into better spaces. A social blue print of requirements already seems to be in place when it comes to the area below the Hebbal Flyover.

Based on the same, our research recommends the following placemaking strategies:

- a) Formal Retail Spaces that are incorporated either as pop-up shops that can be easily dismantled and stored away beneath the shop itself for the use of small-scale vegetables, fruits and flower vendors.
- b) A well-designed transit space that includes a well organised bus stop.
- c) An open-air bazaar like area that can accommodate food vendors and food carts.
- d) An open-air space that can be hired out for events such as food festivals and food specific melas [fairs] that are common in the city of Bengaluru which promotes locally produced grains and cereals from time to time.
- e) An administration office that maintains all these activities that also adjoins the police station for traffic.
- f) Neatly designed and maintained restrooms.



Fig 5. Hebbal Flyover: left-right; existing condition and recommended strategy.

Shivananda Circle Flyover:

BACKGROUND:

The Shivananda Circle Flyover is yet to be inaugurated. The project is still amidst the final finishing stages. Like it's contemporaries, the Shivananda Circle Flyover also serves its purpose very well as a solution for the traffic woes that had escalated over the years due to the infrastructure. This flyover is in the heart of the city and has neighbourhoods around it which are typically residential in nature.

An old neighbourhood of Bangalore, Kumara Park surround the Shivananda Circle Flyover. Kumara Park is home to a mixed use of residential, commercial, medical and educational institutions. Chitra Kala Parishat, a very popular and old Fine Arts school lies in the same area. Homes of ministers and bureaucrats surround this area as well. There is a large requirement for the smooth running of vehicular traffic in this area as well.

OBSERVATIONS:

VISUAL STATE OF THE SPACE:

- Our research was based on recognising flyovers that are important to the cities smooth flow of traffic and have done well so far but have also created spaces below and around them.
- The space currently looks unplanned for and very haywire.
- Infrastructural debris lies all over the space below and the rains have dampened and worsened the situation.

FISCAL STATE OF THE SPACE:

As per the government notified value, in the case of Bengaluru-The Bangalore Development Authority [BDA], the value of the area will be anywhere in between ₹ 2,00,000 to ₹4,00,000 per square meter. This amount has become a daily fiscal loss for the government.

SPATIAL SCOPE:

- Approximately .5 km of linear space and about 250 m of width is clearly available for urban development.

RECOMMENDED DESIGN AND PLANNING STRATERGIES:

Since the Shivananda Circle Flyover is yet to be completed, the BDA still has the power to do something great with the spaces that lie below the flyover. One needs to take into consideration the areas surrounding the flyover. Posh residential areas with a little bit of retail and mixed commercial spaces thrown in could be a hint as to what type of development can be designed and executed below this flyover. This area also has a dire need for parking space.

The retail and commercial spaces in and around here have minimal or nil spaces for parking and this leads to congestion and mismanagement of vehicular traffic.

Based on the same, our research recommends the following placemaking strategies:

- Spill over art galleries and plazas that can become art installations can be used by the art students of Chitra Kala Parishat and other surrounding schools, Parks and open spaces for children of the neighbourhood areas surrounding the flyover to play. Life sized indigenous games such as Chowka Bara, Chess, Hop Scotch, et al can become interesting landscapes when incorporated As a place making strategy.
- Neatly designated and designed paid parking lots for 4 and 2-wheeler vehicles that will generate revenue will also be beneficial.
- These spaces for art can be rented out and will in turn generate a constant revenue. Provision of parking spaces for this area, ones that can generate revenue for the maintenance of the parking lots will be beneficial as well.



Fig 6. Shivananda Circle Flyover: left-right; existing condition and recommended strategy

Domlur Flyover:

BACKGROUND:

- Domlur, located in the heart of Bengaluru, is a bustling neighbourhood renowned for its vibrant blend of commercial and residential spaces.
- Domlur is known for its proximity to major tech parks and IT companies hub for professionals in the technology sector and hosts the software park Embassy Golf Links (EGL).

OBSERVATIONS:

VISUAL STATE OF THE SPACE:

- Despite serving as a crucial connection between important areas, ongoing issues such as debris dumping, sewage inflow into the stormwater drain, and neglect of the waste transfer station have transformed the space into a distressing eyesore over time.
- The vacant land in question is being used for purposes including a biogas plant, a cow shed and a garbage transfer point thus converting it into a notorious trash black spot.

FISCAL STATE OF THE SPACE:

As per the government notified value, in the case of Bengaluru-The Bangalore Development Authority [BDA], the value of the area will be anywhere in between ₹ 1,50,000 to ₹2,00,000 per square meter. This amount has become a daily fiscal loss for the government.

SPATIAL SCOPE:

- Approximately .5 km of linear space and about 250 m of width is clearly available for urban development.

RECOMMENDED DESIGN AND PLANNING STRATERGIES:

- a) Our strategy for revitalizing the areas beneath the Domlur Flyover reverses the previous dynamic, transforming once-empty and unwelcoming spaces into vibrant public realms, inviting people to engage with them rather than keeping them at bay.
- b) Spaces under the flyover can be developed as plazas and leased to open air pubs or food-service providers with bustling outdoor seating areas, it could provide the perfect setting for tech workers to unwind and socialize after a long day at the office.
- c) Additionally, these spaces foster networking opportunities, with many tech events, meetups, and informal gatherings taking place in these lively venues.
- d) When managed effectively, food or other vendors situated within a public plaza can serve as valuable amenities and consistent revenue sources.
- e) By infusing fresh vitality into previously neglected areas, we encourage the essential interactions among office workers, residents, and visitors that are integral to nurturing lively, thriving urban environments.



Fig 7. Domlur Circle Flyover: left-right; existing condition and recommended strategy

Conclusion:

1. The potential that these projects have, is large not only in terms of place making but also making it a holistic inclusion for a larger picture.
2. The Bengaluru Development Authority [BDA], which is the local Government Body is now understanding the need for the development of the spaces below the flyovers and bridges.
3. It recognizes them as empty voids that are expensive and are becoming expensive daily, not only by lying idle and unused but also when they need to be developed will cost a lot more than being integrated into the plans and execution of the construction of the bridges and flyovers.

4. Our research has identified the problems created by the voids under the flyovers in some of the most expensive areas in Bengaluru and based on case studies has developed proposals for three major flyovers.
5. We have recognized the need for designing these spaces under the flyovers keeping in mind the type of area that these flyovers are built around.
6. If the flyover caters to areas that are commercial or retail, then the spaces below the flyovers need to cater to the user group of these areas where you can see small retail shops or offices, coffee and street food vendors, et al.
7. Similarly, if the flyovers are around residential areas, the need for open spaces and parks become more of a necessity and thus the designs must reflect the same.
8. Bengaluru is fondly known as the “Pub City” of India. Integrating resto-bars, pubs and spaces that cater to leisure and night life can be well integrated into the spaces below flyovers that are close to IT parks that have a lot of user groups who would like to have these spaces in close proximity to their work places.

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