

Role of Streetscape in Shaping Urban Design

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Abstract—City boulevards are the most broadly dispersed and intensely trafficked urban open spaces. As urban communities endeavor to enhance decency in the assembled environment, it is essential for planners and designer to have a succinct comprehension of what adds to the quality of streetscapes. Streets are a vital part of any city's public open space system. They function as movement corridors for pedestrians, cyclists, transit and vehicles, as well as support many social and business activities. The presence and character of the streets play an enormous role in determining the overall quality and liveability of the city. The paper examines the existence of street elements- paving, street trees, medians, lighting and street furniture; when applied over time will enrich the visual image and urban design of the city. It further focusses on the basic elements and principles of streetscape which improves the urban design quality of the public right-of-way, accessibility and pedestrianization. Further, the analytical study covers some examples in relating the basic principles of streetscape in order to use it to develop streetscape of one of the main urban streets in Bhopal, Madhya Pradesh. The paper is concluded by the sustainable streetscape solutions which will have a positive impact on achieving sustainable urban design, the functional and esthetic aspects of built environment, and hence enhancing the visual image of the cities.

Keywords: Sustainable, Streetscape, Urban Design, Visual Image

1. INTRODUCTION

Urban Design is the specialty of making and forming urban areas and towns. It includes the course of action and outline of structures, open spaces, transport frameworks, administrations, and comforts. It is the procedure of giving frame, shape, and character to gatherings of structures, to entire neighborhoods, and the city. It is a system that requests the components into a system of boulevards, squares, and pieces. Urban design mixes design, scene engineering, and city arranging together to make urban territories useful and alluring. [1]

It includes the character and definition of those components that make up general society domain, including the general population streetscape, open and private open space, and the structures that define and location the road. Urban character is defined by the scale and type of the structures, the person on foot scale, and general society spaces made by the structures.

Urban design is a key to making places that are effective both socially and economically, great to live in, and alluring to visit. Urban design is crucial in making community identity. It

is effective planning in the widest sense, and it can help to deliver better public services. It additionally accomplishes esteem for cash in new advancements, and to make great utilization of rare assets. Urban Design is at last a key method for meeting the difficulties of 'sustainable development'. In its accentuation on remaking settlements to improve them, it means to operationalize techniques for adjusting environment, economy, and the social domain.

2. STREETSCAPE AND URBAN DESIGN

Streetscapes are a significant element of the community realm, which not only helps to define mobility but also states a community's aesthetic quality, uniqueness, economic activity, well-being, social cohesion and opportunity. Streetscape can have a substantial effect on how people perceive and interact with their community and the built-environment around them. If streetscapes are benign and pedestrian friendly, it is more likely that people will walk which can help to reduce automobile traffic, encourage local economic activity and improve public health.

Designing boulevards can help the urban designers create diverse transportation systems and more accessible neighbourhoods by improving non-motorized travel conditions, ameliorating urban environments, and assimilating special design features such as pedestrian walkways, cycling tracks, traffic calming design and road space reallocation. Streetscaping is a significant constituent of New Urbanism, Transit Oriented Development, and other efforts which are undertaken to redevelop urban areas. It often comprises wider sidewalks, bus pull-outs, bicycle lanes and improved on-street parking design. [3]

Streets play a vital role in enhancing the experience of an individual, visual image of the city and make the interaction with the city more affluent. It helps in having a clearer understanding of the linkages between the cities' open spaces. Allied pedestrian networks allow people to travel easily and comfortably within the city, and facilitate the use of public transportation. It connects open spaces, landmarks and nodes, and can be at different levels, allowing one to escalate the city from different viewpoints.

The street, perhaps more than any other single element of urban design, has two powerful effects: it can unite single enclaves or it can support or undermine the function of a particular enclave- it can be helpful or inimical to the area it serves. The street is one of the most vital factors of the urban form. It is to the city what wheel is to the machinery. Thus, urban design for any city could start with an evaluation of streets according to their widths and positions, and from that an idea could be gained of where different center city developments might take place appropriate to the physical dimensions of the city. [4]

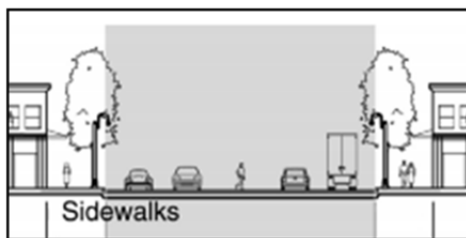
3. ELEMENTS OF STREETScape

“Streetscape elements are those functional and aesthetic items in pedestrian spaces that provide amenity and utility to pedestrians and other street”.

Streetscape elements emphasize the unique character of a neighborhood, block, city centers or historic district. For instance, benches in downtown or shaded sidewalks on a residential street encourage activity and create an active environment, vibrantly that bestow significantly to the overall livability of an area.

Elements of streetscape are major constituents of streets' urban design, and are encapsulated as follows:

Sidewalks:



Pavement is a prerequisite element of any streetscape.

“Sidewalks should be designed to impart secured, appealing, interesting and pleasant spaces for pedestrians by delivering well designed and harmonized tree planting, street furnishings and lighting.”

Planters: Planters are added to provide texture, color and interest to a streetscape. It helps to define and separate spaces also helps in determining primary building entrances, and boost esthetic value.

Street furnishing: Street furniture shall be compatible and harmonized in design, colors, styles and materials, which will be supportive to the architectural style.

Benches: Benches are one of the significant public resources that contribute to build the city an amusing space for pedestrians.

Lighting: Lighting is a vital component in streetscape, as it should grant in creating safe, secured and esthetically appealing public spaces usually in the night.

Trash receptacles: Dustbins can be the most useful streetscape element and should be necessarily situated for pedestrian traffic near benches, bus stops, and other activity nodes to minimize the pollution.

Signage: Signage plays a major role in designing a pleasant urban environment by creating an orientation tool and visual guide for both drivers and pedestrian.

Bus shelter: Bus shelters are structures situated at some bus stops to secure passengers from weather. All bus stops should be marked by bus stop signages and provided with benches and dustbins.

Street corners: Street corners provide enhanced pedestrian space and opportunity for people to interaction and communicate through the arrangement of benches and site furnishings.

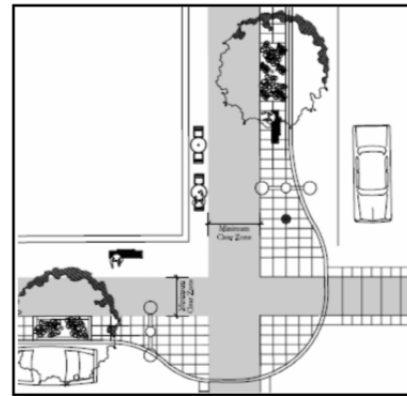


Fig. 1: Street Corners

Medians: Medians are an effective method of making a streetscape more pedestrian friendly, to dramatically alter the visual character of street for both pedestrians and motorists.

Crossing: Crosswalks are an essential part of the pedestrian network. Increased crosswalk paving can create motorists more aware of pedestrian activity.

Public art and Café space: Public art can valuably contribute to local identity, and providing multiple and layered expressions. It can become a local landmark, or simply add richness to a building or landscape.

Outdoor cafe's provide an active street frontage and natural locations for arranged and spontaneous social interactions. [5]

4. FUNCTIONS OF STREETScape

- Reduced and more appropriated urban traffic speeds.
- Create secured pedestrian environments

- Trees call for planting strips, which further separate motorists from pedestrians, buildings and other urban fabric.
- Enhanced safety.
- Better business.
- Less drainage infrastructure.
- Rain, sun, heat and skin protection.
- Convert streets, parking and walls into more aesthetically pleasing environments [6]

5. CASE STUDY: NEW MARKET, BHOPAL [MADHYA PRADESH]

5.1. Study Area Description:

The study area selected is New Market (Roshanpura) located in Bhopal, Madhya Pradesh. It is one of the major urban streets of Bhopal having commercial characteristics.

The extents of the area are Bhabhadha road on the West, T.T. Nagar square on the South, Station Road on the East, Roshanpura Chowrah on the North. The streets surrounding the area majorly observes all commercial activities and on-street parking. The streetscape is such that it encourages the enhancement and revitalisation of commercial areas in Bhopal.



Fig. 2: Location Map (New Market, Bhopal)

5.2. Street Typology:

The streets within the area can be majorly categorized as major streets and minor streets. The major streets are approximately 6mts. wide and carries large number of pedestrians and some vehicles carrying goods to the shops. Whereas the minor streets are approximately 2.5 - 4mts. Wide

and no vehicles are allowed into these streets. In general, the streets within the area carry a mixture of vehicles and people, where the pedestrian and vehicle movement are aiding one another.



Fig. 3: Major and Minor Streets of Study Area

5.3. Sidewalks:

The Fig. 4 shows the section of a major street of the study area i.e. New Market road. It can be observed that the presence of sidewalks have an advantageous impact on the appearance of the area. Sidewalks function as integral components of pedestrian-friendly street systems where pedestrians can experience safety, comfort, accessibility and efficient mobility. Sidewalks also function as outdoor rooms and gathering places and help define community character in the area.

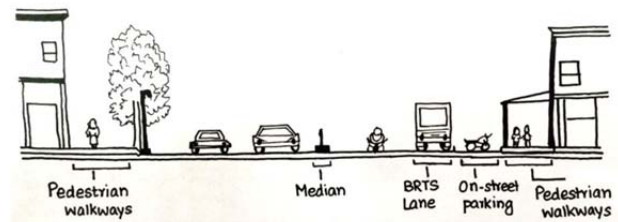


Fig. 4: Street Section of Major Road (New Market Road, Bhopal)

6. FOCAL POINTS AND URBAN OPEN SPACES

The main focal points in the New market area are:

1. Roshanpura Chowk
2. Top n Town Ice Cream Parlour
3. Mosque on the South
4. The main raw market area
5. Dinshaw Ice Cream Parlour

These focal points are a prime aid to orientation and help an individual to form strong visual characteristics. They are a center of major activities taking place in the entire area throughout the day. The urban open spaces present in the area are a compliment and foil to urban form. Such spaces help in understanding the relationship of an individual with the present built environment. [7]



Fig. 5: Focal Points and Urban Open Spaces

7. RECOMMENDATIONS

- More seats are to be put where they are available and unmistakable.
- Seating should be provided in the zones of high walkers.
- Low quality of street surfaces in different spots must be improved.
- Litter ought to be overseen well in the paths where there are food sellers.
- Small trees or planters can be put in the open zones for better nature of air in the region.
- Legibility of the territory can be enhanced by putting signage and information boards.
- A couple of dim lanes in the night make a feeling of shakiness in the psyches of users, henceforth every one of the avenues ought to be lined by the lights.

- Grills are to be put on open nalhahs for wellbeing and clean street.
- The development of the BRTS corridors is making activity burdens at different areas, such issues ought to be tended to.

8. CONCLUSION

Streets are the most plentiful and dispersed urban open spaces. They are the place where a significant part of the life of a city happens. The outlines of avenues, and the three-dimensional assembled situations encompassing them, streetscapes, are without a doubt considerable for urban reasonableness. Streetscapes are the "open air rooms" one experiences when turning the corner, or venturing out the entryway into the road. While streetscape configuration is affected by horde considers, the general extents and size of these spaces are controlled by geometry of structures, and at times trees, which are the biggest and most outwardly overwhelming articles in urban settings.

In terms of India, streets are a constant source of visual chatter, with varied voices that compete for our attention. This can be seen in the multitude of signs that one is confronted by on urban streets. [8]

Streetscape elements contribute vitally to the utility of urban avenues as open spaces, yet organizers regularly shortsightedly evaluate avenues by the usefulness of their roadways. This paper illustrates how these minute details are overwhelmingly important in terms of Urban Design and henceforth increase the legibility of a city or area.

REFERENCES

- [1] Mc.Gill. (2016, April 18). *Urban Design and Housing*. Retrieved from Mc.Gill : <https://www.mcgill.ca/urbandesign/what>
- [2] Network, E. U. (2016). *Urban Design, How is it important for cities?* Copenhagen: European Urban Knowledge Network.
- [3] Institute, V. T. (2016, March 23). *TDM Encyclopedia*. Retrieved from <http://www.vtpi.org/tdm/tdm122.htm>
- [4] Spreiregen, P. D. (1964). *Urban Design: The Architecture of Towns and Cities*. McGraw-Hill Book Company.
- [5] Reeman Mohammed Rehan Department of Architecture, F. o. (n.d.). *Sustainable streetscape as an effective tool in sustainable urban design*
- [6] By Dan Burden, S. U., & May, 2. (n.d.). *22 Benefits of Urban Street Trees*.
- [7] Reddy, S. P. (n.d.). *Documentation in terms of Urban Design*.
- [8] Sign Wallas:An exploration of the Indian streetscape. (n.d.). *Type Events Conference*.