

# Assessment of Urban void space – A case of the west zone, Surat city

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**Abstract** - Many cities have recently experienced urban development issues due to rapid urbanization, population growth, and the economic crisis, which has impacted the quality of urban living. Due to the tension between urban uniformity and environmental setting, most city patterns emerge from lost space, which is usually dismissed as insignificant. The various advancement and distribution networks in operation in a city generate a disparity in development in different areas. As a result, 'pockets' of areas are frequently left undeveloped or underdeveloped. These areas are referred to as urban void space or leftover space. They appear perhaps by coincidence during the design phase, sometimes due to ignorance or simply as a feature of the city's time flow. These areas are frequently no-land men and thus vulnerable to misuse. This paper describes an attempt to comprehend and apply void space assessment to examine the impact of void spaces in Surat's West Zone.

**Key Words:** Urbanization, Urban void, leftover space, Void Space, Void space Assessment

## 1. INTRODUCTION

Rapid urbanization and growing populations are significant challenges confronting cities today. Today, most cities face the challenge of creating holistic environments in urban cores, particularly as collective, unifying, and restructuring frameworks for new (re)development. Many studies focused on urban public spaces, primarily parkades and nodes, without delving deeply into urban voids and leftover spaces and how to use them optimally to benefit users and the city. Urban voids are spaces that serve no purpose and are underutilized, and they are mostly found between residential and commercial areas, with no clear explanation for their existence. Urban voids are an essential vital resource and a valuable component of substantial benefits that reflect great opportunities for the city's development. As a result, it should be coordinated to maximize its effectiveness while minimizing any adverse effects. The government must develop strategies and programs to deal with these areas by investing in and utilizing them in the development process. The study provides criteria for selecting void space and method of assessment of void space from the various literature to select void space and assessing them in the west zone of surat city.

## 2. CRITERIA FOR SELECTING VOID SPACE

A total of 54 void spaces were identified in the city's west zone based on the types of the urban void. To select urban voids, criteria were developed to determine if the space would meet a minimum standard for possible transformation from void to public space. The requirements were loosely based on the American Planning Association's Characteristics and Guidelines for Great Public Spaces, 2016, and the Project for Public Spaces' What Makes a Successful Place? (2016) helped determine a space's accessibility, visibility, scale, primary function, and perception of safety[1].

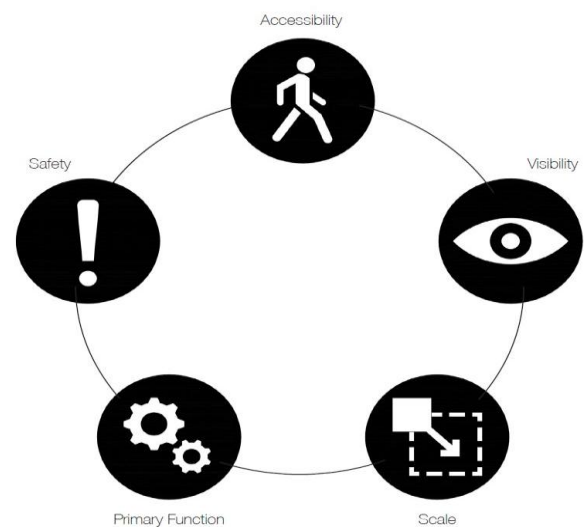


Fig -1: Criteria for selecting void space

- 1) Scale: A minimum of 40m<sup>2</sup> must be available, allowing approximately ten users to occupy a space comfortably.
- 2) Visibility: must draw attention and create awareness; cannot be hidden; must be visible in the public domain.
- 3) Function: The space's primary function could be changed for the benefit of the community while having no negative impact on the surroundings.
- 4) Accessibility: The public domain, such as roads or public spaces, must be accessible.
- 5) Safety: It had to be perceived as a safe place for public gatherings and use. Spaces with steep slopes that would be difficult for the public to navigate were also eliminated.

Based on the above criteria, 20 sites are selected, which is shown in table 1

**Table -1:** Selected void spaces in the west zone

Selected void spaces in the west zone		
Void no.	Type of Urban Void Space	Co-ordinates
1	Functional Void	21.23241,72.78824
2	Functional Void	21.23105,72.79093
11	Large Scale Plot	21.22309,72.78719
14	Large Scale Plot	21.21875,72.78386
15	Large Scale Plot	21.21881,72.78346
16	Large Scale Plot	21.2184,72.78361
19	Residual Void	21.21571,72.79784
21	Large Scale Plot	21.20478,72.80770
28	Infrastructural Void	21.19190,72.80502
30	Large Scale Plot	21.19030,72.79583
37	Large Scale Plot	21.19271,72.7893
40	Large Scale Plot	21.18810,72.78704
41	Large Scale Plot	21.18199,72.78121
42	Infrastructural Void	21.18188,72.77923
43	Infrastructural Void	21.18227,72.77964
47	Residual Void	21.19013,72.77240
49	Large Scale Plot	21.19956,72.77670
50	Residual Void	21.19829,72.76963
54	Residual Void	21.20299,72.76760

### 3. ASSESSMENT OF SELECTED VOID SPACES

The assessment of void space was carried out to identify the condition of the space and its characteristics in various aspects to determine its potential for development. The selected void spaces are assessed using seven main factors with underlying sub-factors [2].

#### 1. Sociability

- A Group of citizens engages in activity
  - Children's
  - Elders
- Occurrences of social events

#### 2. Environment

- Noise Pollution
- Suitability for green space
- Vegetation cover
  - Grass
  - Plants & shrubs
  - Tree
- Waste dumping

#### 3. Informal Economic activities

- Economic activities engage with
  - In morning
  - Evening
  - Throughout the day
  - Seasonal

#### 4. Accessibility

- Walkable path access
- Visible from major road
- Approachable through transits

#### 5. Traffic Condition

- Vehicular traffic
  - Peak hours
  - Off-peak hours
- Pedestrian traffic
  - Peak hours
  - Off-peak hours

#### 6. Built-up Environment

- No Built-up (Vacant)
- Informal Built-up
- Informal Partly Built-up

#### 7. Size

- Area (in sq. m)

### 4. RESULTS AND FINDINGS

The assessment of void spaces was carried out by recording answers in Yes or No and on a scale of 1 to 5. Table 2 shows the results of the assessment of void space.

It can be seen from table 2 that among 20 selected void spaces, only four void spaces got more than 65%, and the highest is 81% for void no. 41. So when this space is developed, its full potential will be used. As the potential to

be developed for these void spaces is known, these void spaces will not create void space (functional void) again.

**Table -2:** Results from assessment of individual void spaces

Results from assessment of individual void spaces									
Vo id No .	Soci ability	Env iron ment	Info rma l Eco no mic al acti viti es	Acc essi bilit y	Traf fic Con diti on	Buil t-up Env iron ment	Size	Size (In sq. m)	Tota l/7
30	0.5	0.67	0.25	1	0.5	1	0.75	1905.31	0.67
2	0	0.50	0	1	0.88	0.33	0.25	341	0.42
1	0.25	0.50	0	0.78	0.25	0.33	0.5	616	0.37
11	0.5	0.75	0.5	0.89	0.63	1	1	8209	0.75
14, 15, 16	0.5	0.38	0	0.33	0.13	0.33	1	7320	0.38
19	0	0.54	0	0.78	0.63	0.33	0.75	1262.41	0.43
21	0	0.92	0	0.56	0.75	0.33	0.25	402.17	0.40
28	0	0.25	0	0.78	0.25	0.33	1	9,747.8	0.37
37	0	0.63	0	0.33	0	0.33	1	2210	0.33
40	0	0.75	0	0.44	0.13	0.33	1	3311	0.38
41	0.75	0.94	0.25	1	0.75	1	1	7000	0.81
42	0.50	0.50	0.25	1	1	0.33	1	4,632.2	0.65
43	0.25	0.63	0.25	1	1	0.33	1	5,506.6	0.64
47	0.25	0.69	0.25	1	1	0.33	1	635.4	0.65
49	0	0.75	0	0.44	0.5	0.33	1	2631	0.43
50	0.5	0.46	0	1	1	0.33	1	2346.84	0.61
54	0.5	1	0	1	0.625	0.33	0.75	1478	0.60

[2] Ruchita, P., Master thesis 'Identification Of Potential Use For Spatial Voids Of Urban Spaces' Birla Vishvakarma Mahavidyalaya, 2019

[3] Shakila Khalid, N. (2020) 'Exploring the Prescriptive and Descriptive Lost Space in the Setting of Urban Fabrics of Kuala Lumpur', Sociology. Available at: www.intechopen.com.

[4] Omar, N. A. and Saeed, H. (2019) URBAN VOIDS AS POTENTIAL RESOURCES FOR THE CITY DEVELOPMENT

[5] Rekha Bhaskaran, M. (2018) 'URBAN VOID-A "BYPASSED" URBAN RESOURCE', in International Conference on Urban Sustainability: Emerging Trends, Themes, Concepts & Practices (ICUS) 2018. Available at: <https://ssrn.com/abstract=3208217>.

[6] Vijaykumar Bhatt Shantaben Manubhai Patel, B. (2019) Identification of Urban Void Spaces in an Area of Vadodara. Available at: <https://www.researchgate.net/publication/332604758>

[7] Hashem, O.M., Wahba, S.M.E. and Nasr-Eldin, T.I., 2022. Urban voids: identifying and optimizing urban voids potential as a revitalization source in enhancing developing countries' city income. Journal of Engineering and Applied Science, 69(1), pp.1-30.

[8] American Planning Association. (2016). Characteristics and Guidelines of Great Public Spaces. Great Places in America. Retrieved January 4, 2016, from <https://www.planning.org/greatplaces/spaces/characteristics.htm>

### 3. CONCLUSIONS

The problem of urban void space is currently the world's most challenging issue. To improve the aesthetics of urban areas, it is critical to rethink and repurpose these void spaces while avoiding new construction.. Through assessment of void space, it will help determine its potential for development. This paper analyses the selection of the void space scenario of the west zone of Surat city and its assessment for determining the potential to be developed for the void spaces.

### REFERENCES

[1] Hamelin, C. (2016) 'The Potential of Lost Space: A New Model for Identifying, Classifying and Transforming Urban Void Space'.