

# URBAN SUSTAINABILITY - STREET CHARATER, INFRASTRUCTURE & IDENTITY

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## Abstract

*The radical transformation of the natural environment that began towards the end of the eighteen century affected humanity, where no humane tradition or even plain self-respect acted as a brake to all out spoil, cities grew into non cities and so we have not seen our cities as they are. Urban patterns are the identification of the uniqueness of an urban city. Cities growing up with a past pace and as you see urban scenario is also changing with a great development, urban fronts are adding up to urban scenarios as you see development happing in both ways on a city level and on urban level .In cities even small town and streets are adapting few more techniques to catch up with the growing development. Street functioning and market places are also turning up to be development areas and development fronts. As this scenario is changing on urban front small cities and villages are also adapting to the fast pace development. Our City planning manifesto including political agendas always talk about new developments & growth, but sustainability always remains a missing link. Development alone can never be a right approach for a developing nation if sustainability is not being considered an integral part of its planned/ proposed development agendas. **The true success of any developed country lies in striking a chord between development and environment; in achieving sustainable development.** This stays true for all developed countries across the world, which are at present going through a modern-era revolution i.e. **Urban Sustainability**. In India, green and sustainability terminologies had been introduced recently, yet it is popular among only a few stakeholders of the society rather than being treated as a mass movement. Keeping in mind the current and future expected population growth of our country, thinking about 'Development' alone will not be sufficient for the overall sustainable growth of our country. Development and Urban environment are in fact two sides of the same coin. Hence a balance between the two entities has to be ensured at all times for sustainable growth.*

**Keywords:** Urban patterns, Planning manifesto, urban sustainability, growth, street, Character, Identity, Infrastructure, Green Parameters.

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## Introduction

Looking at one developed feature of urban development is the **Street**, it is a turning points of public interest the character, the function the density with respect to its specification is what makes the street so great and noticeable. Different countries, cities, state, town and villages have a peculiar character of their individual streets. If you see street of Mumbai and street of New York the difference is so varied, the character is so noticeable, the colors, the pedestrian act, the vehicular circulation, the stalls, the people's behavior is so varied and that makes that particular space so important and perfect. Urban streets also adds to this pattern of urbanization. The streets is a place of identification it is where you live addressing signify a buildings position on the street, and directions are given in street terms. Streets are public thoroughfares yet they are also possessed by those who live alongside them. Street has certain peculiarity along with the area it's surrounded by and so even those functions or patterns have a strong impact on the functioning of the street. In India especially in developed cities like Delhi, Mumbai, Kolkata etc. we often come across people severely complaining about the inefficiency and inadequacy of the infrastructure facilities & improper development of streets & roads, and without a second though the responsible municipal corporations are cursed and blamed for all the consequences. We have never realized that it is not the lack of performance of these corporation which has dragged us into these adverse scenarios but the culprit is none other than overpopulation which has crossed the carrying capacity of the cities far ago.

Sustainable urban streets will help in not only harmonizing natural and manmade infrastructure, but also allocate well-defined infrastructure in place which will be efficient in handling the city's current & future populations. Generally, Urban sustainability involves adopting strategies like proper design based on stipulated population, establishing proper water and waste management system, Waste minimization & management incorporating **3R principle**, use of Green energy like Solar, wind etc. & energy efficient systems, provision of green spaces, use of low impact development practices etc. Urban sustainability is the biggest component of an infrastructure development. As per IPCC, nearly 30% of the global GHG emissions are contributed by the transport sector. The urban infrastructure in India is contributing to about 10% of the energy related GHG emissions in the country. The share of walking, cycling and public transport modes have been declining gradually. Tremendous growth in personal motor vehicles has given birth to a trend that is leading to problems related to congestion, air pollution and road accidents. It has become an alarming to need to develop circulation networks which promote walking, cycling, collective public transportation services etc. Some of the cities across the world have woken up to this need and have initiated measures which will soon create a significant difference. For example In Copenhagen, Denmark more than a third of the city's 1.2 million people regularly cycle to work via more than 217 miles of dedicated bike lanes. The city has targeted to have 50% of the population on two wheels by 2015 by closing down some major roads to cars and developing an additional 43 miles of bike lanes. Copenhagen also aims to be the world's 1st carbon neutral capital by 2025. Green & smart streets & roads are the need of the hour but what also makes the street or infrastructure more interesting by also keeping its character & identity intact.

Mumbai is the crowding points one says it but if you study the character, the Urban Streets in South Mumbai has multiple functions, the streets begins with the dialogue of the vendors selling and buyers buying goods with crowd coming in and leaving the space making the street have its own identity. The transformation with which it goes is a character which the urban street has

and makes it smarter. Green infrastructure we all know is what lacking in the streets of Mumbai, but character & identity is what it owns.



Fig 1.1& 1.2 showing urban streets (image null bazaar-Mumbai)

Towards the end of the 19<sup>th</sup> century and continuing up to the first half of the 20<sup>th</sup> century, when the Mumbai was flourishing due to its trade, streets were developing & evolving. The need for Market Street selling special commodities and traded material grew in the city. At the same time a great need of housing was felt. And as a result of all this a strange mixture of commercial, residential areas spread around the side of streets adding a character making markets streets came in to existence. the urban street got its character as there were no governing body for housing and thus as a result private owners and landlords built up this areas into street which had a mixture of both commercial and residential and the streets got up its own identity turning it into market spaces.

### Methodology

- Street study will be carried out through an existing site.
- Various analysis of street functioning.
- The site will be studied with respect to its each character, throughout a certain period and patterns and functions will be traced down.
- The settlements along the existing site will also be studied.
- The existing site surrounding, the settlement along the street with the market will be studied in detail and analysis will be based on this scenario.
- The different festivals celebrated will also be studied with the respect to the street.
- Later a comparative analysis will be drawn down with respect to the studies carried out.
- Comparative analysis will be the conclusion showing the scenario of a place functioning without changing its character.

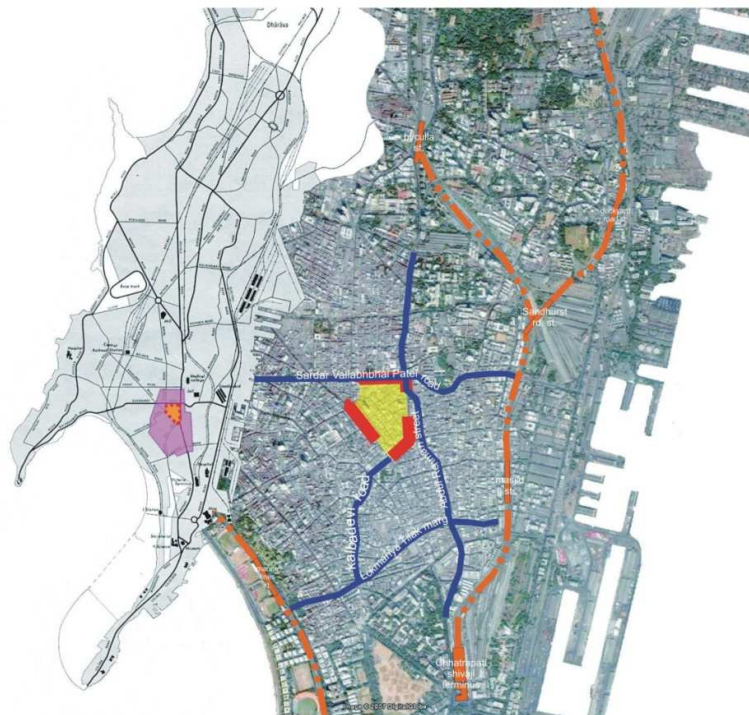
## Terms

**Street:** The street is a public easement, one of the few shared between all sorts of people. As a component of the built environment, the street sustains a range of activities vital to civilization. Its roles are as numerous and diverse as its ever-changing cast of characters. It's a character in itself.

**Function:** The action for which a person or thing is particularly fitted or employed. /A specific occupation or role.

**Pattern:** Something designed or used as a model for making things, a natural or chance configuration/ a form of model proposed for imitation.

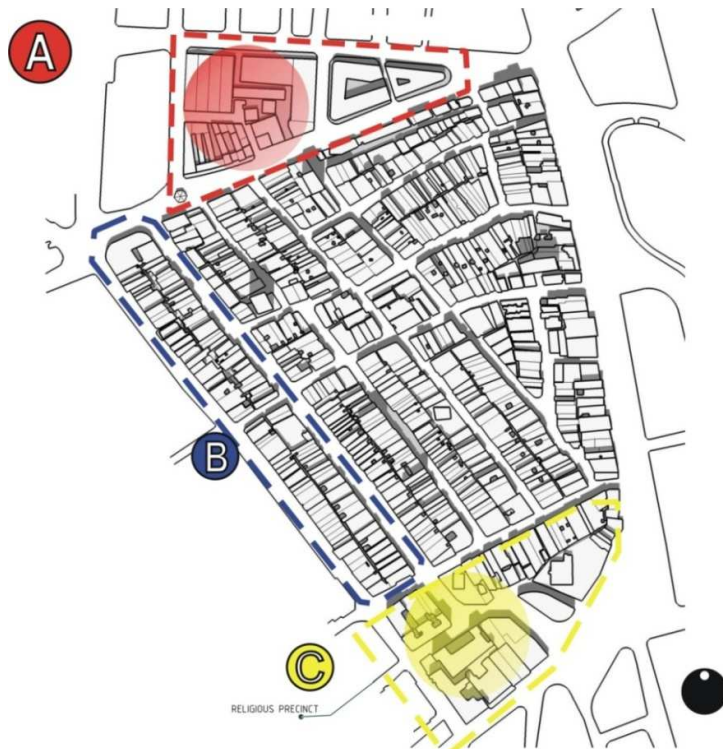
**Mumbai Location:** Null bazaar is located between south Mumbai and the fast redeveloping industrial lands into malls, multiplexes and having enclaves on the other. The need for street market of special commodities on account of the growing trade on hand and the need for housing on the other hand turned this area into a strange mix of residential and commercial activities. It is significant geographical location that makes null bazaar area one of the most vulnerable to haphazard development by private developers unless the development is property controlled.



**Fig 1.3** map showing location of null bazaar



### Surrounding context



**Fig: 1.4** map showing surrounding area

#### Sardar Vallabhbhai Patil Road

**Entry:** to the market is from sardar vallabhai patel road. The main road connecting to bhendi bazaar, null bazaar to girgoan. Divider divides the road into 2 parts flanked by 4-5 storey buildings on both the side.

**Goods** are brought to the market with the help of hand craft and hamaal's. The market comprises of random placement of shop like pan ghali, metal utensils, fish market, vegetable market, meat market, chudi bazaar and flower market all this activities are carried on the ground floor and along the street.

**Hawkers:** display their stalls in front of these shops, electricity is provided by the shops along the residential blocks.

**Surrounding:** has a public chowki and Mumbai mahanagar palika buildings near main road. There is also a mosque near the market place.



### Bapu khote and kika street

It is primarily a residential predict, but serves as a vital commercial area not only for its immediate neighbourhood but also for the city as a whole .the commercial activities vary widely from vegetables , meat and plastic goods markets. A difference in colour and trading activity is seen here and the street has not got a specific function. Other activities such as scrap goods shop, plywood marts, handicraft shops etc exits in larger number within this precinct. Materials are brought from all over the country to null bazaar street. Goods are Fairley cheaper here as compared to other markets. Trade activities are done on a very large scale.

### Jain temple complex

Temples and mosques fill the place with peace and heavenly. Due to the major traffic congestions on the street due to the pedestrian and vehicular traffic it has lost its charm losing its presence. This temples and mosques have been here since null bazaar come into existence and are almost 100 yrs old structures.

### Pattern/bazaar

Chaotic places comprise of shops, stalls and hawkers can be seen as the symbolic image a metaphor for the physical state of the market. The chaos and apparent disorder of the bazaar is precisely the quality essential for the survival of vending-physical proximity between the buyers and sellers. The classical, colonial, dual city structure survived until the 1960's when the unprecedented scale of distress migration from rural areas to Bombay land and other urban centres completely altered the exclusivity of the two domains, the bazaar become an instrument that absorbed migrants, cushioning their entry into the city. Street bazaar wove the two worlds together with the system of shopping and recreation spaces that infused their own architectural and visual character wherever they spread. Arcades provided a condition for hawking.

Street study



**Fig 1.7** map showing indication of sections

Street identity

Shown below are the different layers of the street with respect to its surroundings, functions and character.

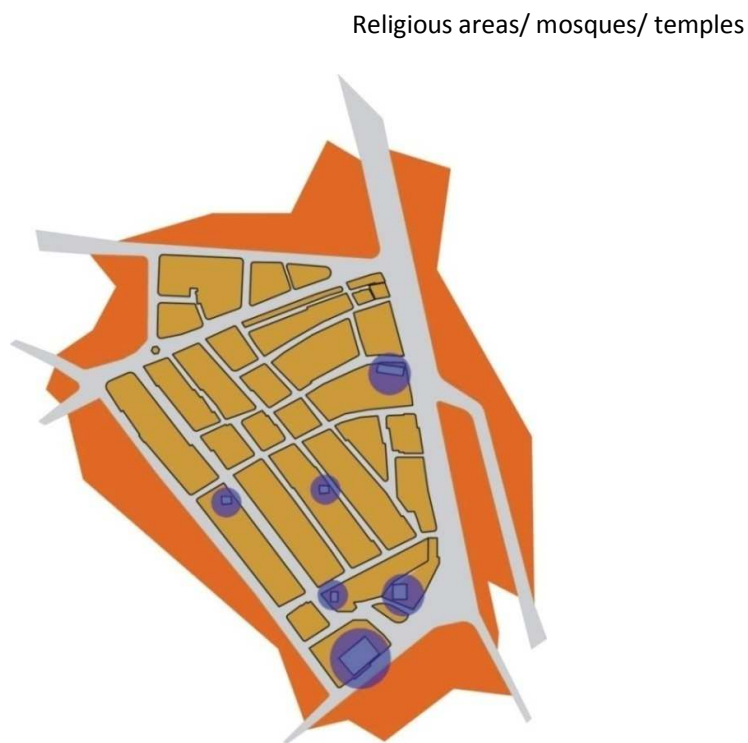
Traffic



**Fig.1.8** map showing flow of traffic



**Fig . 1.9** map showing street surrounding

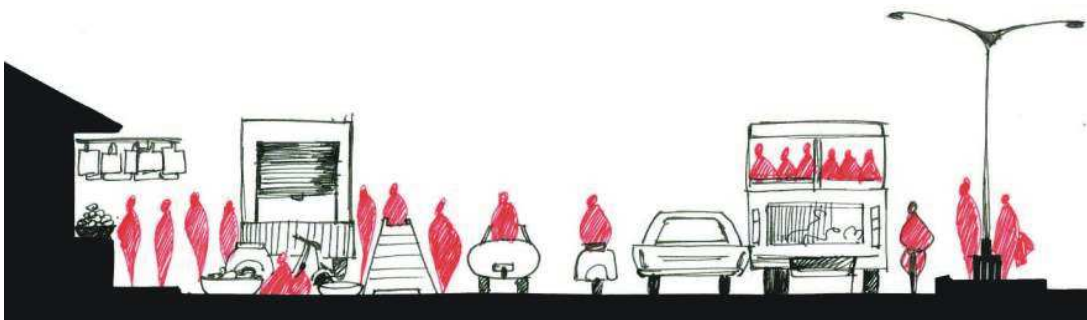


**Fig 1.8** map showing religious places

The street identity seen here is that there is a need for parking space has increased due to the population in these areas. Users find it inconvenient park their private vehicles, handcrafts, bicycles which has no specific importance given due to this users tend to park the vehicles on the side of the road which causes obstructing affecting the vehicular traffic. There is no specific space provided for loading and unloading. This automatically reduces the width of the road also adding to it are the hawkers the people on this street the street footpaths is being occupied by the hawkers. Then the street is busy with pedestrian moment as there is a great combination of buyers and sellers and the street character is more specific.

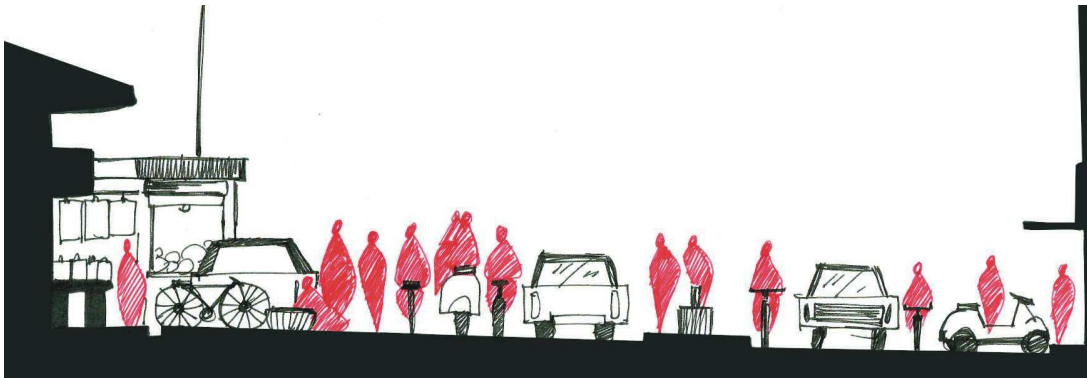
Fig shown below describes the street character at null bazaar.

### Existing street sections



Sardar vallabhbhai patel road

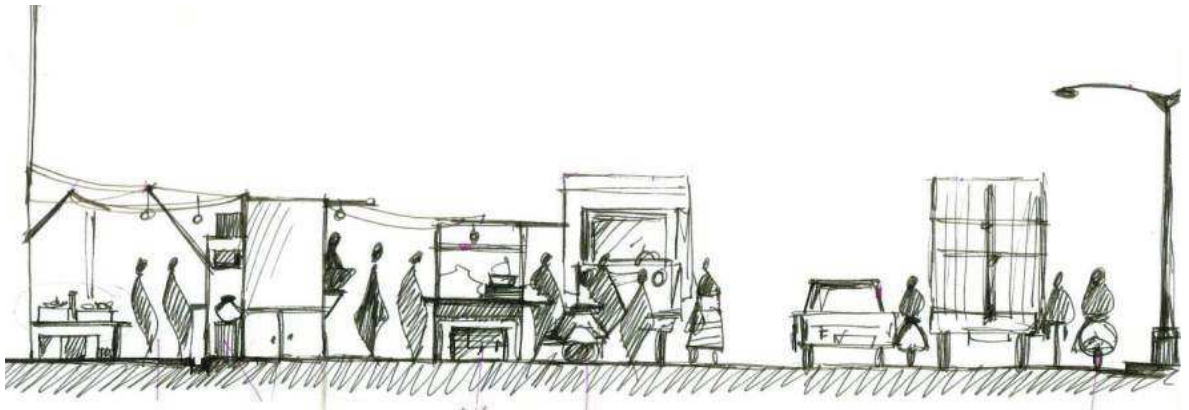
Vehicular movement and the people activities during the pick hour traffic but the market facade functioning in the same manner. The pattern of the street is the same.



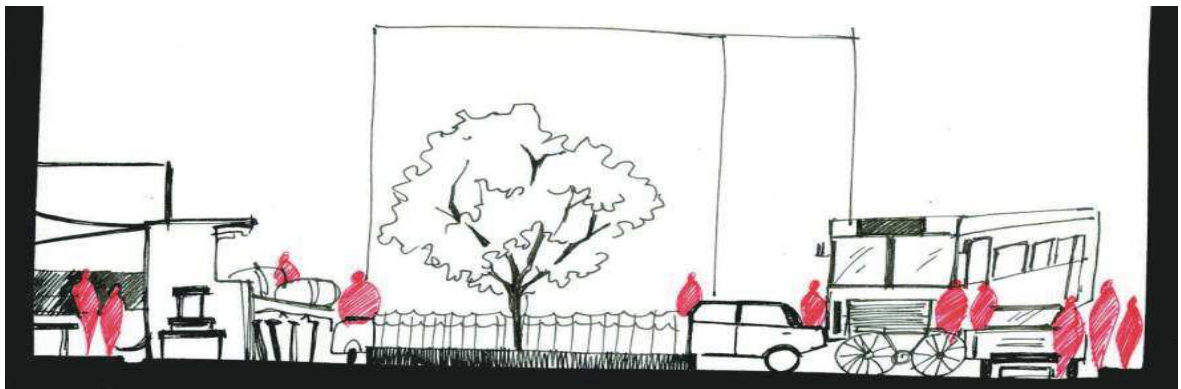
Sardar vallabhbhai patel road-2

Vehicles' standing and moving on the road there is a give and take relation happening between the sellers and the buyers with the different movements of vehicles this is again a street pattern.



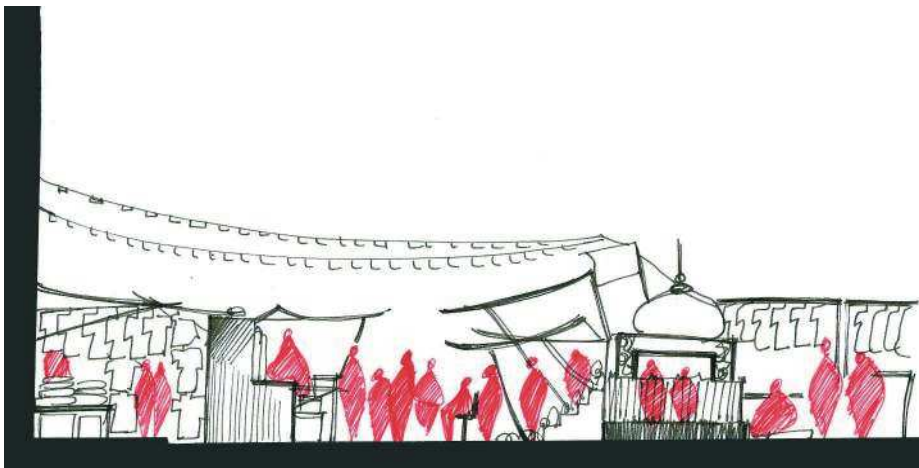


Market street section The market section the facades is so interesting with different activities happening in the background the patterns, the variety, the colours ,the movement is all what u can see in a one picture frame



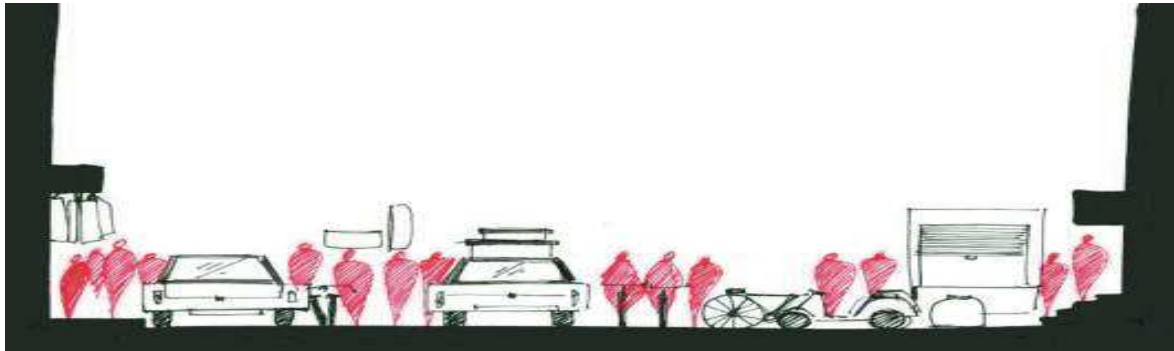
Kika Street turning section.

Vehicular parking spaces and the movement of pedestrian around the parked vehicles.



Sardar vallabhbai patel road beginning street section.

Religious places in the background, selling and hawking happening around it and the street have a different overlook with the religious activities also being a part of the street.



Beginning of Kika Street

## **Vasai**

### **History**

The cultural transformation of the natural environment that began towards the end of the 18<sup>th</sup> century affected human culture. Vasai has demonstrated religious harmony throughout its history having been under Portuguese rule for a long period; vasai has got a significant Portuguese influence. The cultural old religious due to the Portuguese kept on changing with the arrival of people to vasai from different parts of the country. As Portuguese also do came from goa and cochin this place has got a strong catholic community impact as the Portuguese erected the first church in the vasai fort area. Along with the community places and churches they set up various market places. And the vasai bazaar also know us the papdy bazaar was been set up. Early trade and goods where been carried to this bazaar from south Mumbai. But due to the settlements of different people to this place goods where locally available.

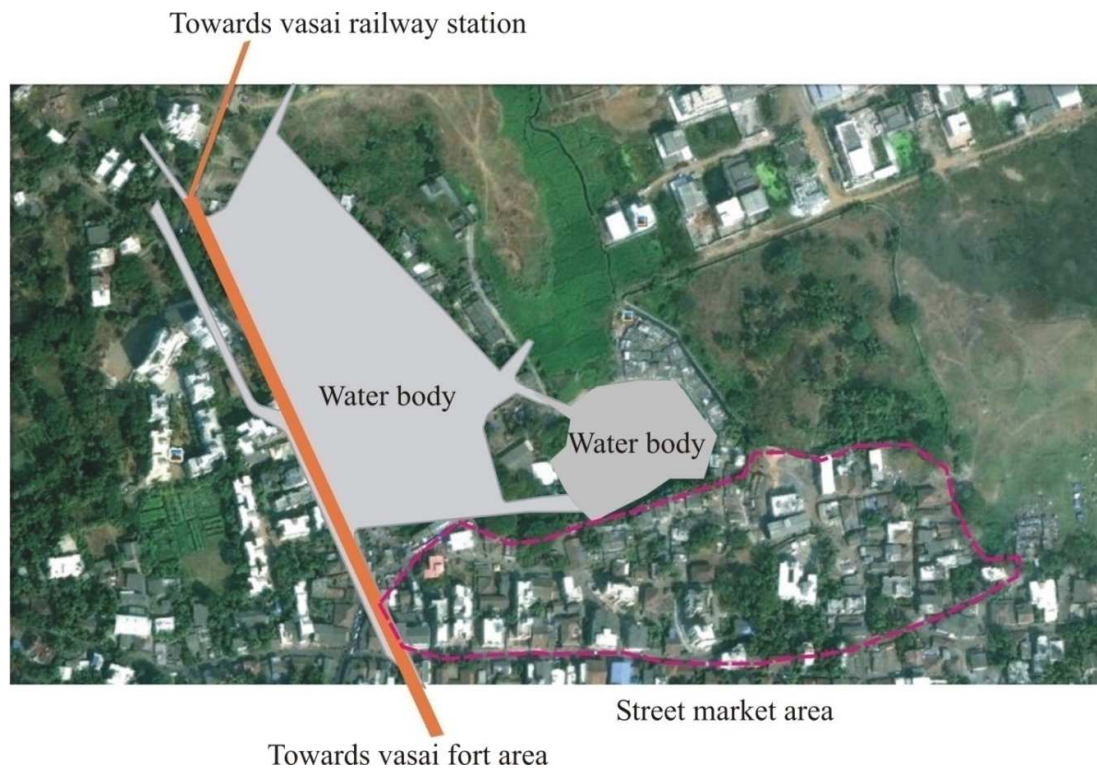
### **Location**

Vasai is placed between south Mumbai and north Mumbai along the Arabian Sea. And vasai bazaar is in the heart of vasai. This place is a fast developing area now due to various commercial and residential projects being set up here. The need of this market is that as it in the centre of the city people can access it from all parts. It has a mixture of all the activities like the fish bazaar, kanda –batta bazaar, cloth bazaar. The street is along a residential area with surrounding buildings have a structure of g+2 where the ground area is a shop. on the other side of this there is a water body (talaoua) which is been maintain and this place is used for different activities and during festivals. The settlement around the talaou is the major people who have their selling business on this street. This street has a good sense of visual connection as the water body adds to the character of this street the architecture is simple and the buildings mostly portraits the Portuguese style of architecture.



- A. Residential Area
- B. Commercial Area
- C. Settlements
- D. Market Area

Shown below are the different layers of the street with respect to its surroundings, functions and character.





### Surrounding context



### Residential area

The residential area is a well mixture of all culture of people living together. It has housing varying from the late 90 to the future generation. This residential area is along the main street where the bazaar takes place and in the background the water body makes this residential area more precious. During festivals various cultural activities like the ganesh vatsavo is celebrate along this water body. Residential area has a mixture of commercial as well as residential units.

### Street market area

**Entry:** entry to this market is long the same road, the main road connecting the vasai railway station and other site the vasai fort area.

**Goods:** goods are brought to this area from different parts with the help of trucks and hammals. The market contains a mixture of fish market, chicken/mutton bazaar, cloth bazaar and general kirana bazaar. All the selling and buying happens on the ground level

**Hawkers:** hawkers display their stalls along the periphery of the water body and along the street to the other side of residential block. The footpath is left empty for the pedestrian movement. The stalls are well covered and the various shelters are provided by the governing body for storage and display of goods.

**Surrounding:** the surrounding has a police chowk and a ricksaw stand and there is a temple construction going on in the centre this block does not have an idol, the idols are placed during the particular festival period also a heavy vehicular movement is observed on the adjacent road.



**Fig:1.9** image shows the water body and things happening around it.



**Fig: 1: 10** main road showing vehicular and pedestrian movement during on pick hours



**Fig:1:11** market place



**Fig:1:12** festival time at the market.



### Pattern/bazaar

A chaotic place comprising of shops, stalls and hawkers can be the symbolic image of a physical state of the markets in Mumbai, but the visual at vasai bazaar is somewhat different as market are always chaotic this place has got its own pattern. A chaos of hawkers and buyers along with water body in the background adds to the beauty of this place. The settlements along the water body are people from different places and variety in different festivals and cultural pattern is observed here it spite of the of the strong catholic community impact observed here. This cultural connectivity along with the water body adds up to the architectural and visual connection of this place with the interaction between the buyers and the sellers.

### Street identity

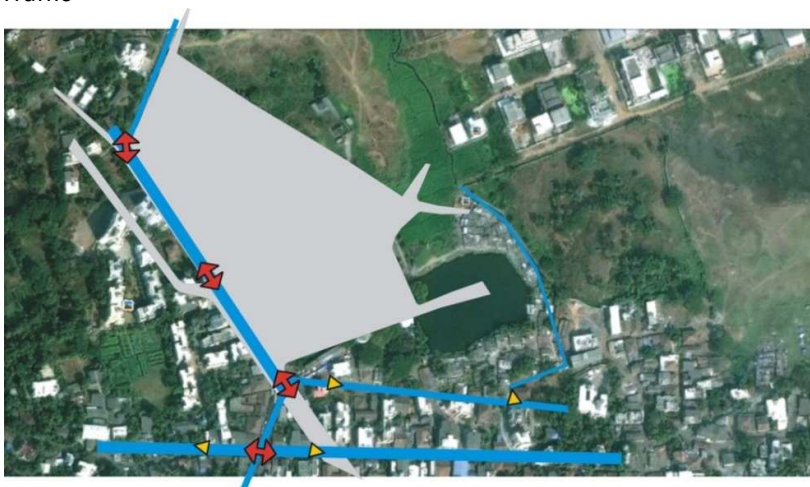


- A. Residential Area
- B. Commercial Area
- C. Settlements
- D. Market Area



Shown below are the different layers of the street with respect to its surroundings, functions and character.

### Traffic



### Religious areas/ mosques/ temples



The street identity seen here is that there is that this place is well set up with respect to urban front. The residential areas around the bazaar street are put up very well with respect to the urban touch, parking spaces is a problem due to the population in these areas. There is good provision specific space provided for loading and unloading. This automatically makes the street more sustainable with respect to its function the loading and unloading have specific time intervals wherein the vehicular and the pedestrian actives are lower and well functional. The street footpaths are being occupied by the hawkers. Then the street is busy with pedestrian moment as there is a great combination of buyers and sellers and the street character is more specific.

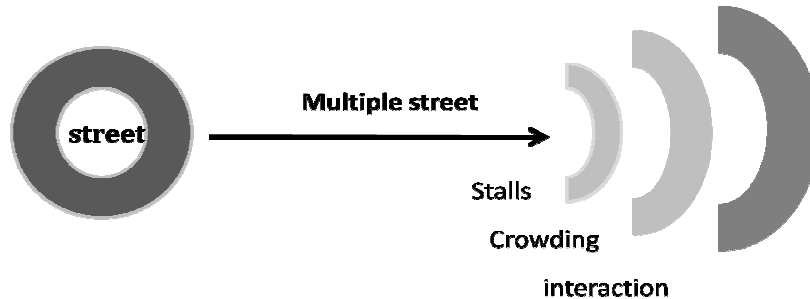
### Street analysis

Streets have a unique character/pattern/function. But streets can be more specific by occupying less density and being multifunctional with good sense of spaces & adopting sustainability parameters. A function of the street needs to be more functional to achieve its efficiency at urban level, the measures should start from creating very stringent at the same time incentives based sustainable codes, which will enforce every individual to observe street character & behavior to perform better. Urban streets can be less chaotic and more flexible and can serve to the urban sustainability issues on an urban front/urban road level.

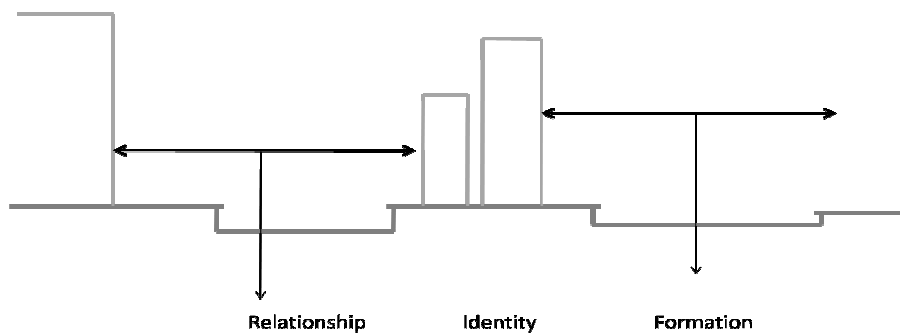
The urban streets as we preserve it today have undergone changes over a period of time. However one can see the basic schema underlying its character & identity and thus can be preserved through Green & smart parameters. The only viable solution is to go GREEN.

## Comparative street analysis and observations

### Null bazaar, Mumbai.

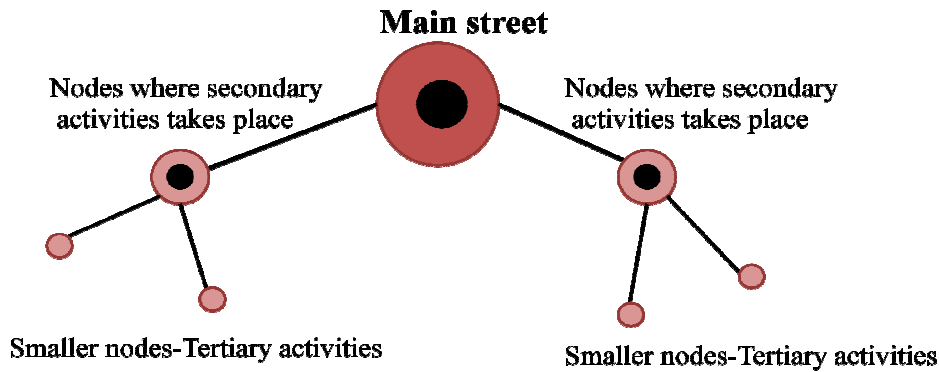


- Streets here have their own identity
- Multiple functioning happens here
- No proper street segregation.
- Footpaths are covered by hawkers selling goods
- Commercial outlets can be used in better ways having their own segregation times as this may not affect the street pattern as there is lot of loading and unloading activities taking place on the street throughout the day
- Parking spaces can be defined
- Due to multiple activities happening in this place and also many religious places set up here this street becomes chaos during festival time
- The major portion of this area is the street bazaar and thus it occupies more density disturbing the vehicular and pedestrian traffic.
- Good utilization of spaces should be done and old structures could have been converted to market space.
- The character of this street is specific but functions keep on changing
- The street and the residential blocks have good interaction spaces.

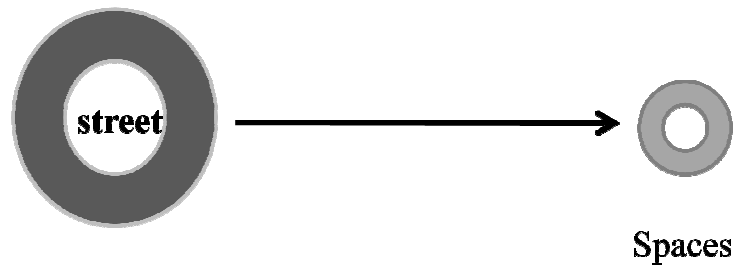


During night time when the bazaar comes to a halt this space can be converted to a food bazaar and the same streets can be used up for multiple activities.

### Observation diagram



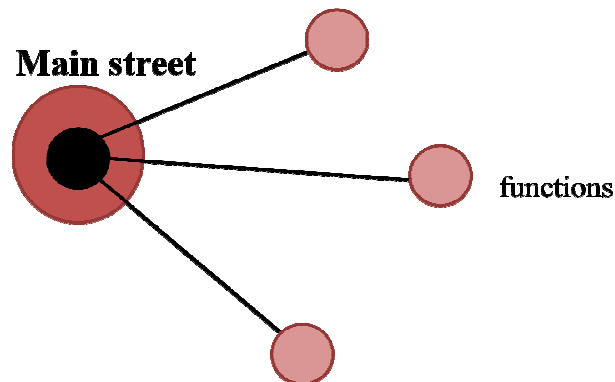
### Vasai bazaar, vasai



- Here street too has got its own identity
- This is a small market in comparison to null bazaar but activities carried out are more specific and well planned.
- Hawking happens on the street along the sides of the road but footpath are kept empty for pedestrian activities
- Even an urban context is seen in this bazaar.
- Less density is occupied and the street functions in a better way thus reducing the vehicular and pedestrian chaos.

This street bazaar functions throughout a day from morning to evening and during festivals this space is used for ganesh vatsavo, garbha.

### Observation diagram



### Conclusions

Streets have a unique character/pattern/function is been observed in the above mention study. But streets can be more specific by occupying less density and being multifunctional with good sense of spaces. A function of the street if you go on observing throughout the country is the same. The only change can be sometimes the street character is different while sometimes the function is different. A smaller street also function and chatters to the same identity but only the observation is the area occupied is less denser than urban streets and small space makes the street function more systematic manner. Urban streets can be less chaotic and more flexible and can serve to the urban sustainability issues on an urban front/urban road level. These streets can be preserved through different thought process.

### So street is observed as a form

Observing the street from the above mention studies shows that there always exist a certain principles of order in the way it is structured. The streets as we preserve it today have undergone changes over a period of time. However one can see the basic schema underlying its form. This form in the street can be the activities taking place on it.

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A sustainable urban development model (pg 69)  
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**-On streets** by Anderson Stanford

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**Planning for urban quality: urban design in towns and city** by Parfect Michael

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**Journal article:**

**Essay on Urban Design and Urbanism**

*"The Present City and the Practice of City Design" in Everyday Urbanism by John Kaliski International Journal of Scientific & Engineering Research, Volume 5, Issue 7, July-2014 ISSN 2229-5518*  
*Urban streets and nodes : A case of Bangalore Ar. Bhaghyalaxmi M Department of Architecture BMS College of Engineering Bangalore, India bhagyalaxmi.arch@bmsce.ac.in Ar. Sindhu Srikanth Department of Architecture BMS College of Engineering Bangalore, India sindhusrikanth.arch@bmsce.ac.in Ar. Arjun K S Sekos Architects Bangalore, India arjunks91@gmail.com*