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A Planning Proposal of Physical Infrastructure Renewal for Walled City Area: A Case Study of Surat City

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Abstract - *Urban renewal is most often undertaken to make life safe and comfortable to the urban dwellers to live in that area or boost economic base or activities in that area. The core area of Surat city is usually characterized by the intense wholesale and retail commercial activities concentrated in the historical core area. However, over the period of time the walled city area of Surat city face problem by inadequate infrastructure, poor living conditions and traffic congestion. The reason behind of the decline of the walled city of Surat due to the past few decades, there has been shift in the focus on the development to the surrounding area of the old city. Much of the infrastructure in walled city are old and bad in condition that need of restoration or replacement. The poor level of services, traffic and parking problems make the walled city area undesirable place to stay. This study to analyze various issues and identifies existing problem as well as anticipates future challenges and research aim to improving the living condition of traditional city Centre in the walled area of Surat.*

Key Words: Urban Renewal, Surat City, Walled City, Inner city Area, CBD Area

1. INTRODUCTION

The concept of urban renewal is broad and complex, and encompasses various methods of intervention when facing diverse urban problems. From a planning approach, urban renewal aims to improve the physical, socioeconomic, and environmental aspects of urban areas through redevelopment, regeneration, rehabilitation, and preservation.
Different definitions given by planners and researchers aim at sustainability by integrating the different dimensions of urban renewal, such as:
• Physical renewal means development of physical urban infrastructure, redevelopment
of blighted area;
• Social renewal means leads to improvement of community and housing;
• Cultural renewal promotes enhancement of culture and traditions;
• Economic renewal leads to new generation of employment and revenue; and
• Environmental renewal leads to minimizing ecological imbalances in urban environment.

1.1 Physical Renewal

The most deprived neighbourhoods are almost always in poor physical condition, with vacant or contaminated sites and derelict property. This makes them unattractive areas in which to live, work and invest. Many have the added problems of homes, land and property blighted by interfaces. There is a need to build new hope and a sense of security in these communities. Vacant land and buildings can offer real opportunities for local regeneration schemes.

DSD has successfully used Comprehensive Development Schemes, Urban Development Grants and Environmental Improvement Schemes to draw substantial public and private sector investment into disadvantaged areas This work will continue in the most deprived neighbourhoods but it will be more carefully integrated with other economic, social and community renewal priorities to create the maximum impact. There various aspect through physical renewal can achieve Such as:

- Development of Physical urban Infrastructure; such as water supply system, sewage & waste disposal system etc.
- Redevelopment of blighted areas.
- Renovation & adaptive reuse of historic areas.
- Relocation of land-uses or Land-use change.

2. STUDY AREA

The city of Surat has glorious history that dates back to 300 BC. The origin of the city can be traced to the old Hindu town of Suryapur, during 1500 – 1520 A.D., which was later colonised by the Brigus or the King from Sauvira on the banks of River Tapi. In 1759, The British rulers took its control from the Mughals till the beginning of the 20th century.

Surat became the most important trade link between India and many other countries and was at the height of prosperity till the rise of Bombay port in the 17th and 18th centuries. Surat was also a flourishing centre for ship building activities.

The whole coast of Tapi from Athwalines to Dumas was specially meant for ship builders who were usually Rassis.

After the rise of the port at Bombay, Surat faced a severe blow and its ship building industry also declined. During the post-independence period.

Surat has experienced considerable growth in industrial activities (especially textiles) along with trading activities. Concentration of these activities combined with residential developments has resulted in considerable expansion of the city limits.

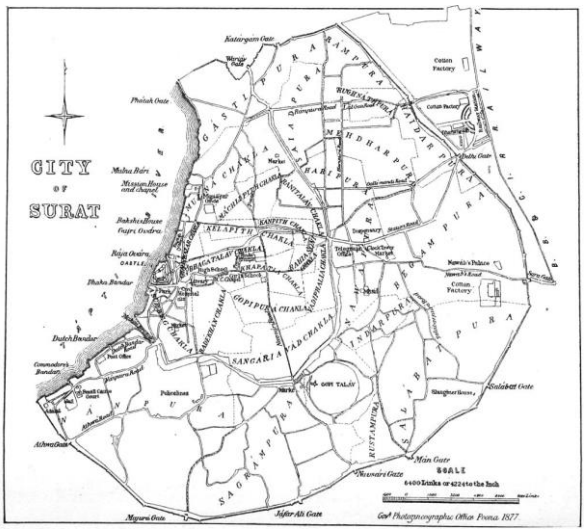

Fig – 1: "Walled City" area of Surat city

The area of the city at begging time within the wall was 178 hectares. The entrance to the walled city area was through twelve gates: to the south were the Navsari and Majura gates and on the west, the Mecca and Badshahi gates and along the riverfront, the Dacca Dwara or Custom House Water gate, Mirbehar and Lati gate. The construction of the entire wall was completed in the year 1707 enclosing an area of 736 hectares. Collection

Table – 1: Ward-wise Area & Population

Ward No.	Name of Area	Area in Sq.km.	Population (2011)
1	Nanpura	1.28	52421
2	Sagrampura	1.31	81554
3	Salabatpura	0.84	53684
4	Begumpura	0.93	41768
5	Haripura	0.23	11378
6	Mahidharpura	0.36	17027
7	Saiyadpura	1.69	56006
8	Gopipura	0.22	18795
9	Wadifalia	0.14	8089
10	Sonifalia	0.24	13499
11	Nanavat	0.46	21022
12	Shahpor	0.39	24979

3. DATA COLLECTION

The existing water distribution network in central zone of Surat city being too old, has leakage & consequently pressure problems at many locations. Due to the existence of multiple lines, it becomes a difficult task to maintain the system. Also, no information is available regarding the number of dead lines in any particular area. Further, the existing system was designed based on intermittent water supply.

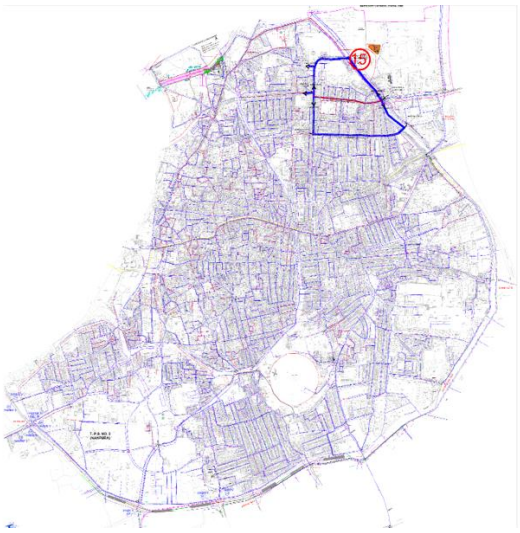

Fig – 2: Existing water Supply System of "Walled City"

The problem of low pressure in water supply persists due to the existence of an aged network especially in central zone. Apart from these, the use of GI pipes for household connections leads to leakage and contamination of water in several areas of the corporation, further increasing the maintenance cost.

4. PROPOSAL

The existing water supply system was designed based on intermittent water supply and also there is lots of issues in system. So, now it is proposed Continuous water supply for quality and quantity of water supply & also to eliminate leakage & contamination and pressure issues**.**

As per the guidelines CPHEEO for Continuous water supply project area is divided in an Operation zone and further Operation Zone divided into numbers of District Metered Area (DMA). One DMA usually has between 1500 to 3000 connections as per the guidelines CPHEEO. And se per, the guideline water distribution system is design for 30 years So, according to that forecast the future population of Central Zone with the help of population forecast methods. And base on that determined the future water demand of Central Zone.

Proposal of Operation Zone (OZ)& District Metered Area (DMA) in Central Zone of Surat city such as:

- Nanpura opertation zone
- Sagarampura operation Zone
- Salabatpura Operation Zone
- Begumpura Operation zone
- Gopipura Operation Zone
- Saiydapura operation Zone
- Shahpore Operation Zone

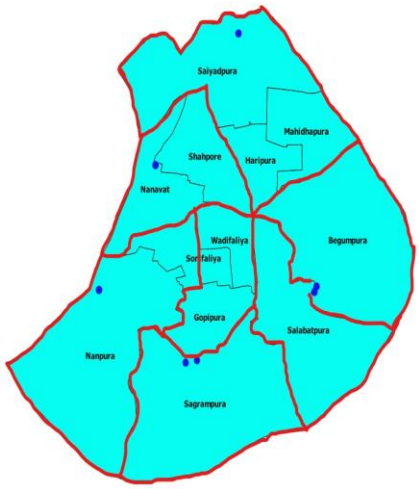

Fig – 3: Proposal of Operation Zone & ESR in "Walled City" area of Surat City

As shown in above figure there 7 number of Operation Zone in central Zone & further this operation zone divided into 26 total number of DMA.

And also shown in above figure there is dark blue circle which is proposal of Elevated Service Reservoir (ESR) or Overhead Tank for each Operation Zone, which is provide sufficient quantity of water to fulfilled the water demand. To design the capacity of ESR is by using "Mass Curve Method".

5. CONCLUSIONS

Surat is one of the fastest growing cities in India as well as World. The area problem of low pressure in water supply persists due to the existence of an aged network especially in central zone. Increasing population has also added to the already existing woes. Apart from these, the use of GI pipes for household connections leads to leakage and contamination of water in several areas of the corporation, further increasing the maintenance cost.

Due to urbanization and increasing population, there is acute requirement of infrastructure for daily life. So proposed Continuous water supply for quality & quantity of water supply and as well as to eliminate leakage & contamination and pressure issues of existing water supply.

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