Smart Neighbourhood Planning in India

Vivek Prajapati[1], Himanshu Padhya[2]
1 Post Graduate Student, Town and Country Planning,
Sarvajanik College of Engineering & Technology, Surat – 395001
2 Associate Professor in Faculty of Civil Engineering,
Sarvajanik College of Engineering & Technology, Surat – 395001

ABSTRACT
Cities are becoming complex and smart not only in terms of civil engineering or in infrastructure development but also in socio-economic systems. The study proposes the smart design method to support the design decision making in sustainable neighbourhood development with multiple objectives. Planners and practicing know that planning projects and research are more likely to achieve significant outcomes when the problem is addressed at the most appropriate stage of neighbourhood. It can be said that there is no such smart neighbourhood located because of lack of implementation of basic concepts of smart neighbourhoods to build a smart city. A smart neighbourhood leads to a smart city. This study reveals the smart neighbourhood in Indian context.
The objective of the study is to provide new and diverse leisure and recreational activities in order to promote healthy and crime free lifestyles, particularly for youngsters. In this study which kind of problems we face in this type of development and an example of a similar planning which will be consider as initial for future planning.
KEYWORDS: Neighbourhood Planning, Area, Population, Smart Planning
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I.   INTRODUCTION

The term neighbourhood is often used to describe the different divisions of urban or rural settlements. In its definition, a neighbourhood is the vicinity in which people live. Lewis Mumford presented 'neighbourhood' as a 'fact of nature', which comes into existence whenever a community of people share a place. Since the early ages of humanity, for practical, economical, sociological and psychological reasons, people have tended to live close together in sections of an area and form communities. Those neighbourhoods have some particular physical or social characteristics that differentiate them from the rest of the settlement. The assembling of these neighbourhoods has formed towns, villages, and cities.

II.   HISTORY OF NEIGHBOURHOOD PLANNING

Neighborhood planning is urban development at a scale greater than household size but smaller than that of a city.

In 1915, Robert E. Park and E. W. Burgess introduced the idea of "neighborhood" as an ecological concept with urban planning implications. Since then, many concepts and ideas of a neighborhood have emerged. Milton Kolter defines a neighborhood as, "…a political settlement of small territory and familiar association, whose absolute property is its capacity for deliberative democracy." While most neighborhoods are difficult to define geographically, anyone who lives in an urban setting relates to an area that they call their neighborhood. As such, it is a useful level to engage in planning practice. One of the first steps in planning for a neighborhood is to define the boundaries of the neighborhood. This process can sometimes be problematic. It becomes difficult when some areas do not want certain streets or houses to be included in their neighborhood boundary.

III.   PRINCIPLES OF NEIGHBOURHOOD PLANNING

I.   **Size:** The town is divided into self-contained units or sectors of 10,000 population.
This is further divided into smaller units called neighborhood unit with 2,000 to 5,000 based on the requirement of one primary school.
The size of the unit is therefore limited to about 1 to 1. 5 sq km i.e. within walk able distance of 10 to 15minutes.
II.   **Boundaries:** The unit should be bounded on all its sides by main road, wide enough for traffic.
III.   **Protective Strips:** These are necessary to protect the neighborhood from annoyance of traffic and, to provide suitable facilities for developing parks, playgrounds, and road widening scheme in future.

IV.   **Internal Streets:** The internal streets are designed to ensure safety to the people and the school going children. The internal streets should circulate throughout the unit with easy access to shops and community centers.

V.   **Layout of Buildings:** To encourage neighborhood relation and secure social stability and balance, houses to suit the different income group should be provided such as single family houses, double family houses, cottages, flats, etc.

VI.   **Shopping Centre:** Each shop should be located on the circumference of the unit, preferably at traffic junctions and adjacent to the neighborhood units.

VII.   **Community Centre:** Each community will have its centre with social, cultural and recreational amenities.

VIII.   **Facilities:** All public facilities required for the family for their comfort and convenience should be within easy reach. These include the primary school, temple, club, retail shop, sport centre, etc. These should be located within 1km in the central place so as to form a nucleus to develop social life of the unit.

IV.   NEIGHBORHOOD PLANNING: INDIAN CONTEX

India's urbanization is a paradox of sorts. The country's urban population is undoubtedly vast at 377 million (2011 Census). India's urban population increased from 17.3 per cent in 1971 to just 23.3 per cent in 1981, and 27.78 per cent in 2001. The 2011 Census figures reveal that just over 31 per cent of the country's population is presently living in urban areas.

The scenario of India is different from western world. Density play an important role in India, post-independence urban planning in India has either ignored density or deliberately discouraged it. This has led to sprawls or even worse, densification without the supporting infrastructure. Higher income category populations prefer to stay away from city centre in low to moderate density areas. Lower income category prefers to stay near city centre because of job opportunity.

Land use is one of the parameters which define the layout of neighborhood in Indian context. Land use is an important determinant of public transportation and sustainable urban form and plays at city, zonal and neighborhood scales. Effective land use planning in India suffers from incongruous regulatory structures at the three levels of government, as well as from other critiques of Master Plan preparation. There is lack of clarity on which services and facilities are to be provided at what scale, and this requires further elaborate exercises. Many cities in India are now formally moving towards mixed land use and implications of this on sustainable urban form are still unknown. Most cities fail to take into account the possibility of providing services/facilities to residents vertically thereby leading to more horizontal sprawl.

Urbanization is a process of city formation is a multi-stage process and involves movement of people to cities. Population growth is often regarded as the key measure of urbanization. As a result of massive increase in population, the urban areas are met with insufficient infrastructure and increased informal settlements often becoming centers for negative human activities with hardly any residents" welfare. Concept of Smart Neighborhoods finds immense significance in answering contemporary urban issues related to safety and welfare. This is especially true in case of Tier 2 cities, which are next upcoming big urban centers.

V.   CASE STUDY: MINAL RESIDENCY, BHOPAL

A rapidly growing city of Madhya Pradesh, Bhopal is pursuing a sustainable development process known as Minal Residency Project. Situated in sub urban part of Bhopal, Minal Residency is a neighborhood spanning over 197 acres. It has more than 3900 dwelling units, and has a population of 20000 people (approximately). The housing typology comprises only of duplexes. However there still is diversity in dwelling units in terms of plot areas (sixteen types in total). Road hierarchy comprise of main road with 24 m row, followed by 18 m, 12 m, 9 m, and 6.5 m in row. This project is being done on two phases. Phase 1 is simply known as Minal Residency, whereas phase 2 is known as New Minal Residency. It is located from important centers of the city at the following distances.

a.   Access
Distance from major centers

Centre	Distance (In km)
Bhopal Railway Station	10
Habibganj Railway Station	9.5
New Market	14
Bhopal Airport	15
Upper Lake	21

b.   Location
By studying the span of development of past few years, „smartness" in terms of location can be gauged for this neighborhood

YEAR 2002

YEAR 2005

YEAR 2009

YEAR 2013

It is shown by the figure that by the passing of years area around Minal Residency has been continuously developed which is perfect example of neighbourhood planning.

c. **Land Use**

As per URDPFI Guidelines land use has been allotted which is as shown below in the table

Land use	Area covered on ground (in sqm)	Percentage allocated on site	UDPFI STANDARD (%)	Remarks
Residential	611241	76.47	45-50	More
Commercial	7438	0.93	5-10	Less
Public and semipublic	3100	0.39	5-10	Less
Recreation	32050	4.01	10-15	Less

Facilities and services	9074	1.14	5-10	Less
Open spaces	34297	4.29	10-15	Less
Parking and Roads	102150	12.98	10-15	Correct
Total	799352	100.00		

SOURCE: URDPFI GUIDELINES 1996

It is seen that area dedicated for schools is 1434 square meters. This is equivalent to 0.35 acres. It is clear that the required area for schools is 11.85 acres. The area dedicated to educational facilities is less. It is also seen that area dedicated to commercial activities is 7438 square meters. This is equivalent to 1.83 acres. It is clear that the required commercial area is 4.94 acres. The area dedicated to commercial facilities is less. In similar manner it is seen that area for community hall is 4423 square meters. This is equivalent to 1.09 acres. It is clear that the required commercial area is 0.49 acres. The area dedicated to community hall is more. Since it has been included in facilities and services, which itself is in shortage.

VI. SMART NEIGHBORHOOD RESULTS SMART CITIES

A city is an interconnected network of systems, Smarter cities have the tools to analyze data for better decisions, forecast problems, resolve them proactively and coordinate resources to operate effectively.
Smart neighborhood is the concept that leads us to develop those areas where slum area is there. If we wanted to develop our city or town or region than we have to focus on the both side of that area: developed and undeveloped. If we will focus on undeveloped area than the standard of developed area will be look as more developed area.

VII. CURRENT INDIAN GOVERNMENT INITIATIVE

The Nagar Raj Bill Act is a solution that tries to address this situation by directly empowering people from the grassroots level of the local society, in urban and rural areas. Introduced in 2006, the model Nagar Raj Bill – meaning "town governance bill" – aims to enable people at the grassroots level of society to make decisions for themselves in terms of physical infrastructure planning. Under the Nagar Raj Bill Act, the Government of India has come out with a model Neighborhood Planning Policy.
NITI Aayog (National Institution For Transforming India) This institute is currently working for betterment of the India.

VIII. RECOMMENDATION

- Neighborhood planning programs should result in a more equitable distribution of public goods.
- Neighborhood planning will result in a wider range of problems being addressed by the planning process and an improvement in public services.
- Amendment of development regulations (density, floor area ratio, height, land use, building codes) as per Urban development plans formulation and implementation and other planning norms to achieve sustainable urban form.
- Accessibility and transport: pedestrian focused within the neighborhood supported by linked public spaces; strong public transport access on edges; restricting motorized vehicular movement within neighborhoods.
- Technology Innovations: Use of solar power, wind power and biogas power whichever is feasible for the project. Promoting green buildings, start using GPS and Bluetooth devices can enhance the neighborhood concept and encourage the development of smart city.

IX. CONCLUDING STATEMENT

The concept of a smart city has been named as both challenge and opportunity. The paper is uncovering the real challenges that are lying in implementation of neighborhood planning in India. Neighborhood comprise of both physical and social relationship in the society. The concept of the neighborhood is well designed for the development of the cities. Besides good planning and design decisions, the application of these principles also require supporting legal frameworks, an analysis of the local society and economy, appropriate infrastructure technology and capacity, and the institutional capacity to enforce decisions.

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