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Integrated Township Starting

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Abstract - This particular project report is a mirror of the work done by our group in order to plan a town. This project report describes the particulars of about the town planning as well as it will introduce the basics of town planning. Far from ancient period or era, it is fact that the health and wealth of country depends on the condition and development of towns. Towns are the important segments for the development and increment of each country should be planned with extreme care to handle all the possible requirements of peoples as well as our nature. Therefore the necessary thing is to plan the towns in such a manner that it will afford more comforts and conveniences to public, without hampering beauty and comfort of nature and wildlife. The main purpose and the basic idea of the project i.e.to create a well-planned town for a group of peoples which is not so close to the city centre and far from main commercial and industrial zone. This report deals with the various aspects which we can consider to plan a town. Obviously, the demands and the requirements of the LIG,MIG and HIG varies with their income and we have given a necessary thought about these three groups in our planned-town. The most important part of the town i.e. road network and housing is placed in such way that it will give more comfort and better operation, lifestyle and accommodation.in this project, we tried to understand the requirements of residential and commercial zone and zoning is done in best from all possible alternatives. The attempt is made to provide the possible facilities and we have tried to zone them to get max. benefit out of it. The town planning demands that subject which mostly needed information of various professions, likely those of architecture, engineer and surveying. The town should not be designed only to satisfy the present requirements of generation; but whatever developmentand infrastructural growth of town should be done under town planner and it should not be look like town is grown in very unsatisfactory manner. So, at the last of the day, our ultimate aim is to plan a town in such a manner that, it should deal with and satisfy maximum possible aspects regarding convenience, environment, health and beauty.

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1. INTRODUCTION

1.1 Study Background

The urban areas are constantly under tremendous pressure due to increasing growth and development. As a result of such pressures, the environmental situation in urban areas deteriorate at faster rate. In these urban areas, the proper of growth of urbanization is breaked the capacity to maintain the standards of public health, environmental safety, and sustainable economic growth.

Failure to sustain the affect of fast urbanization threatens body of human, environmental condition and urban development . Most cities in India are facing immediate and most critical environmental problems such as lack of space, water, inadequate waste management, and pollution control, accidents linked to congestion and overcrowding. Occupation and degradation of sensitive lands and the inter relationships between these problems, their impacts are mainly seen on current generations, which are indicated by poor health, lower productivity, reduced incomes and lowered quality of life.

The present scenario is a different one, rapid urbanization and non-availability of fund and improper management of mobilization of fund resulted into lack of infrastructure service, like water sanitation, transportation, solid waste management and increasing housing density.

1.2 Need of the Study

Cities with dense population i.e. more lifes, more gaining, more waste things and more poverty, but small amount of biodiversity, less jungal zone, available fresh water, soil and less stratospheric ozone layer. We away from sustainability…but how far? If we cannot control, we cannot scale.

Exploitation of any resource exceeding its available capacity leads to extinction degradation beyond restoration. Hence for sustainable exploitation of resource it is mandatory to estimate its capacity. Thus to study the capacity of resource which is most

popular but generally understood with respect to sustainable growth.

Carrying-capability of area, comprising its assimilative and supportive capacities, is defined as the capacity to produce neccesary outcomes from a constrained source base to get a higher and much more equitable quality of life, while maintaining desired environmental quality, and ecological health.

Natural and man made outcomes have finite capacities for associated impacts and assimilating growth.

Every city is different, and each confronts unique challenges in dealing with urban environmental problems.

1.2.1 Integrated Township – Need of Future

The meaning of integrated township and the basic needs for a township to call it as 'integrated' are as follows -

1) To start with, land is basic material for township.
2) Integrated township should include everything that is needed for the 'Stress Free Lifestyle'.
3) It should be planned not only for residential usage but mixed reality usage – walk to work, shopping complexes, schools, gyms, hospitals, facilities for leisure and entertainment.
4) It should offer a better living in apartments, row houses, bungalows at affordable rate.
5) Such townships should maintain pressure on development of the main city.
6) Renting and leasing of residences should be made easy with good rental return. Hence such commercial office should be the part of the township as in foreign countries.
7) Amoung with infrastructural development we need sufficient 'Urban Planning Schools' for post-graduation of architects, 'Landscape Architects' for 'Environmental Art and Design' and for 'Civil Engineers' to work as 'City Managers, Estate managers' for newly planned towns and management of township.
8) Maintenance of townships need skilled and semi-skilled workers – electrical work, plumbing work, garden work, civil works. There is lot of employment potential in this field for new development and maintenance in township.

According to study, India will require 20-25 new cities in the next 30 years. These will logically be situated near the largest 20 metropolitan cities.

1.3 Physical Infrastructure Strategy

The following comprises the elements of the physical infrastructure strategy.

1) The goals of development of the physical infrastructure strategy is the establishment of an proper indicators and array of standards.
2) They address the aesthetic and environmental impacts of development on the environment and the encouragement of development and wider community.
3) This is appropriate in location and character to ensure an smoothly delivery of services which will serve the society in good manner in the future as well as the present.

1.4 Methodology of Study

Methodologies used should deliver results which are useful for deciding which steps to take in future and should be understandable by mass population, in order to motivate the participation of the public in the process.

Thus in this process various issues to be thought about, arises various conditions, factors when dealing with a compound problem.

1) What is the impact of urbanization?
2) What is the present level of consumption?
3) What is the present status of basic infrastructure?
4) What is the condition of basic infrastructure, how is it changing?
5) What are the main conversation between city and people?
6) What conclusion can be drawn about present Scenario and growth about the goal?
7) What need to be done to make progress about the goal of sustainable development?

2. LITERATURE REVIEW

As a literature review we have referred the Magarpatta City town plan and the details are as follows-

2.1 Introduction of Magarpatta City

The idea of Magarpatta city is such a kind of model which we rarely observe in our country. Every land owner dose not want to sell there land to the government or to the property developers. Land owner protect there land but also they want to develop there land so many more land owners as a most of the farmer come together with an idea which help them to fulfill there demand.

The whole area of Magarpatta City development covered 430 acres and around 120 farmer families was owned with more than 800 beneficiaries. The area of magarpatta city is under in Pune Municipal Corporation. This area is consider as agriculture land use but it is fell due to standard limits of corporation. Most of the land owner in this city are farmers and ther sir name is Magar and the patta means a bilt of land So the city named as Magarpatta.

The features and overview of Magarpatta City are as follows-

2.1.1 Innovations in Planning and Development

The Magarpatta Model – An innovative land-pooling mechanism that made the original landowners the primary stakeholders in the development company, rather than the traditional outright purchase method adopted by most third party developers. Most landowners shifted from being farmers to being entrepreneurs. The term 'FDI' thus gathered new meaning, from "Foreign Direct Investment", to "Farmers' Direct Investment". (Refer Figure 2.2 shows Magarpatta city master plan)

1) Access to Economic Facilities (Work Centers) – As an integrated township, Magarpatta City strived to move away from the traditional and outdated planning model of without developing work centers nearby just making residences.

2) Magarpatta City did not want to follow the unsustainable American vision of Suburbia, where isolated fringe residential colonies housed workers who travelled great distances to access their Central Business Districts (CBDs), resulting in wastage of time, fuel and reduction in quality of family life. Magarpatta City developed near about 6 Million Sq. Ft of commercial offices, to create a new city level business destination, for which surrounding residential development became both a sustainable proposition, and a comfortable livability feature based on the tried-&-tested LIVE-WORK-PLAY-LEARN doctrine.

3) Walk-to-Work / Walk-to-School – As an inclusive development, all city level amenities and features were integrated into the planning, in a manner, such that all these facilities became easily accessible, easily suitable. This substances results the planning parameter to Magarpatta City's success.

4) It is accepted knowledge the daily trips made more than 90% from home are for work and school / college. If these trips can be made unnecessary, then a great amount of precious time and energy is saved for each family, resulting in greater amount of valuable time at home, with family and loved ones.

5) The planning of Magarpatta City has been done in such a manner that the offices are at most 10-15 min. pacing distance away from any residential sector.

6) Magarpatta City Public School is available in the ciy itself so that students can go there by there own resources as cycle or bicycle or may car, they can go by walk also from their home in a safe zone and secure as there is separate road for walking as footpath, a couple of minutes away from their residence.

7) Great design concentrate has been laid on the design of these roadside pedestrian walkways, keeping various aspects of Universal Design integrated in the engineering of the footpaths.

8) Due to this nice design there will be more effective use of footpaths in Magarpatta City, suitable for every generation like young, old, able and disabled.

2.1.2 Integrated Amenities

All mandatory and necessary social and physical infrastructures are integrated in planning to ensure the township is self-sufficient and intrinsic.

These include:

1. School
2. Multi-Specialty Hospital
3. Places of work (IT Offices, Professional Offices, others)
4. Shopping Centre
5. Restaurants
6. Banks / ATMs Gymkhana / Sports Facility
7. Cultural Assembly Space
8. Security Checkpoints
9. City-level Public Parks

Figure 1: Magarpatta City's Master Plan

2.1.3 Affordable Housing in Magarpatta City

1) The total housing stock is reserved for smaller flats and percentage of such kind of flats is more, Priced in an middle class range, to ensure that blue-collared worker also find place within the city. As a matter of fact, the housing stock is varied, with multiple choices ranging from 1 bedroom to 4 bedroom flats, to ensure a healthier mix of citizenry and socio-economic inter-reliance. (Refer Figure shows Housing System in Magarpatta)
2) At the city level, there are distinct hierarchies of usage patterns of our green spaces. The variation is from more roadside plantations that the pedestrians can be coverd with green colour and increses the beauty of the road.
3) To a larger city level urban park for all the citizens to access. Every citizen in the

magarpatta city can be easily access to surrounding greenery, and responsive landscaping that is actually used and appreciated (and hence maintained).

4) A centralized open space is provided for the every building. Bringing back the trees and lush landscaping in our progressively urban lives, enhance health and well-being. (Refer Figure)

Figure 2: Housing Systems in Magarpatta

Figure 3: Jogging Tracks along Dedicated Green

2.1.4 Road Hierarchy for Reducing Vehicle-Pedestrian Conflict

a) There is large network of roads in the magarpatta city that provide feasibility for vehicular movement in a planned hierarchical position.

b) Shaded and beautiful landscaping can encourage citizens to discovering the joys of cycling to nearby places.

c) Well-designed urban signs facilitate and gives the direction for finding there destination which signs the level of city. For some fun or joy there is some areas, seating zones are there near pedestrian corridors,So for to take rest and to some talk by sitting with enjoy the surrounding city life.

d) For reducing the possibility of conflict the corridors are planned in such a way that it gives high visibility at the time of turning point due to that yhe point of access on incoming vehicle is more and it helps to avoid collision. (Refer Figure)

Figure 4: Wide Roads with Tree Plantation

2.1.5 Places for Social Interaction

This can be done by two means –

1)By providing various spaces and activities, at differing scales, for people to meet people, and travelling the life together; and

2)At a township level the promotion of various activities that inspires collective enjoyment and participate, like planting saplings alongside roads and in parks on World Environment Day, or lighting some of diyas on the roads during Diwali, up to feel a night of music filled merriment, on Magarpatta City's Foundation Day.

2.1.6 Making a City Sustainable

For making a city sustainable the programs like plantation should be done and Magarpatta is live example of it. (Refer Fgure)

In such a large development, it is in the best interest of both the developer and the larger whole, that processes are made sustainable and energy efficient. In this case of mass construction, reducing the footprint of the development is not only the most ideal thing to do; it's also the smartest thing to do. Some of the processes are:

Figure 5: Important Days (5 July)

1) Water Heating by Solar System

a) To save electricity Magarpatta City makes use of solar energy via Water Heating by Solar Panels, to trap the energy coming in the form of rays form the sun which can heat water for bathing.

b) Every 3 Kilo Watt (KW) of energy saved, amounts to reduction of approximately 1 ton on the greenhouse gases that otherwise been emitted.

c) It also reduces the energy bills of the end users. Every residential unit has panels erected on the terrace, which are connected to water storage tanks thus ensuring hot water usage in each and every home.

d) Magarpatta City has installed close to 7,160 Water Heating by solar Panels, naturally heating 900 Kilo Liters per day which will materialize into an annual saving of 1,45,48,447 electrical units (KwH) resulting in saving 13,483 tonnes of carbon emissions annually. (Refer Figure)

Figure 6: Water Heating by Solar System in City

2) Rain-Water Harvesting

a) Rain Water Harvesting, an eco-friendly method, is extensively practiced at Magarpatta City. Wherein rainwater is collected, recharging the ground water, increasing the water table and makes use of water that would otherwise have gone down the drainage system, into the ground or By the evaporation it can be lost in atmosphere.

b) Over 1 acre lake has been created at the central Aditi Garden to collect water at the time of raining and the overflow from the buildings, which provides multi-fold benefits by the ground water and preserving the sanctity of the environment. Over 261 bore wells have been installed to recharge the ground water and the existing natural wells are in interconnected grid enabling to raise the groundwater table. The land alongside roads and non-usable areas are paved with pervious material. (Refer Figure)

Figure 7: Rain Water Harvesting

3) Waste to Energy – Biogas

A 2 tons capacity Biogas plant is installed here wherein biodegradable waste goes through a process and the non-polluting biogas which is generated is used to generate power to operate a major percentage of the garden pumps. Tthe power requirement is saved nearly about the 118 commercial gas cylinders of may be around 19-20 kilograms capacity per month, which supplies to the power generation of over 270 electrical units per day. (Refer Figure)

Figure 8: Bio-Gas Plant

2.2 Aims of the Study

a) Th study aim is to evolve methodology for developing the urban centers to provide decision-making tool to facilitate better development of the city.

b) To provide comprehensive but overall view of environmental issues that tackled is to be needed through project and to assess the carrying

capacity of infrastructure and apply the same to find out the status of physical infrastructure in 'Solapur City'.

c) To focus on local problems and needs, those special attention is required on short and medium term. The study is an important at the point of view of the developing towns.

d) It will provide information about critical related issues to the development, environmental concerns and the status of the basic urban infrastructure services directly, indirectly affecting the environment, people and would enhance the knowledge about the remedies required for the town.

e) Thus with the application carrying capacity approach the measurement of urban waying capacity with respect to their basic pathway provided like supply of water and sanitation the indicators developed assessment through which the whole capacities and the resources of urban area with respect to solid waste disposal, water supply sewerage and drainage can be assessed in quantitative and qualitative terms.

2.3 Objectives of the Study

a) To understand the basic problems of the city and to try to plan the city in order to mitigate the discussed problems.

b) To plan the city to fullfill the important needs of people of different income groups.

3. CONCLUSIONS

In this project, the attempt has been made to plan a township in "Integrated" manner. After completion of project work we are capable to put the conclusion that we really feel, can conclude our work done properly.

The conclusions we got are as follows:

To plan a city proper knowledge of each and every filed is needed and much more problem can be sorted out by planned city.

Solapur city is in the phase of rapid development in all industrial, educational and commercial sectors, because of which there is high possibility of migration of people to Solapur city which will lead to grow city in haphazard and improper manner.

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