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Sustainable Development in Urban Landscape

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Abstract: **India's urban population has grown at an alarming rate, The census of 1941 showed a population of 318 million while the latest one in 2011 identified 1260 million of which, 285 million people are currently to living in the urban jungles of the country. These urban areas face complex and rapidly evolving challenges daily. Resources are rapidly degrading as mankind is eating its way into the natural capital of the planet. Developing nations are facing the crunch of this urban population burst. When we consider how degraded our ecosystems are, there is far less to sustain today than there was 30 years ago. Not surprisingly, the cause and effect both fall in the lap of urban areas.**

Sustainable development is therefore an essential element of built and urban environment. However, the term "Sustainable development", has become like an elastic band that has been stretched over and over in all directions. Whatever be the interpretation, one thing is very clear: Sustainable development is not enough anymore. This is because "the ability of future generations to meet their own needs" has already been compromised. We as architects and engineers must understand that the need of the hour is to realise that sustainability is a dynamic concept of design approach.

The main aim of this paper is to discuss some of the important issues relating to sustainable urban form that would lead to sustainable urban development and also deals with providing pragmatic solutions to the problems in hand with the help of relevant references and examples.

Keywords: **urban, sustainable, development, future, design**

1. INTRODUCTION

The term sustainable development can be defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable development is an organizing principle for human life on a this planet with rapidly degrading and exhausting resources. It posits a desirable future state for human societies in which living conditions and resource-use meet human needs without undermining the sustainability of natural systems and the environment, so that future generations may also have their needs met. Sustainability is a has multi-dimensionality, aspects such as economy, society and environment are closely associated with development.

It in universal agreement that the rapid growth of urbanisation has profound effect on the social and physical fabric of a city. Lots of emphasis has been laid on sustainable development. Sustainable palling and design is of utmost importance in today's scenario. In sustainable promotes a sustainable approach towards construction, that appreciates and develops smart growth, architectural tradition and classical design.

Urban planners that are interested in achieving sustainable development or sustainable cities use various design principles and techniques when designing cities and their infrastructure. These include Smart Growth theory, Transit-oriented development, sustainable urban infrastructure and New Urbanism. Both urban and rural planning can benefit from including sustainability as a central criterion when laying out roads, streets, buildings and other components of the built environment.

2. URBAN CONTEXT AND ISSUES OF SUSTAINABILITY

Urbanization is he most significant phenomenon of 20th century which has almost affected all aspects of national life in India. Urban India in terms of population has increased more than ten times during the last 100. By 2020, urban population will be 40 per cent of the total population and by 2050 the figure will be 50 per cent. The share of urban population has risen from 17.2% in 1951 to 27.8% in 2001. The number of cities with a population of more than one million has gone up from 5 in 1951 to 35 in 2001. Of these, 8 cities have population between 3 million and 5 million and 6 cities: Delhi, Mumbai, Kolkata, Chennai, Bangalore & Hyderabad, have a population of more than 5 million. These million plus megacities are the nodes of economic growth of India.

2.1 EFFECTS OF URBANIZATION

By and large, the nature and extent of growth of Indian Cities is unplanned and unanticipated and the provision of services is not enough. The demand for services such as transport, water, and sewerage continually outstrips supply, resulting in a situation of perpetual scarcity and shortage. Pressure is evident on the basic services. About 54 per cent of urban households

do not have access to toilets and 64 per cent are not connected to the public sewerage system. Almost 50 per cent of solid waste remains uncollected. Although 89 per cent of urban population is covered by treated water supply, water is supplied only for a few hours per day. World bank has reported that 40, 000 people die in India every year because of air pollution.

Environmental pollution has been a rising concern and affecting human health today. This is therefore not the task of government but also of individuals, organisations to initiate measures to provide some comfort to this problem. Thus helping prevent the adverse effects arising due to pollution especially in urban areas.

2.2 ISSUES ON FOCUS

The Indian city is an amorphous manifestation of its cultural, socio-economic, political and demographic diversity. Compounded with dynamics of change, population growth and land speculation, the resultant built-form has become complex, chaotic and amorphous Despite significant progress in economic growth and poverty reduction, according to Tendulkar Committee (2009), India's 38% population, i.e. 400 million, are living in poverty. One of the main reasons behind this is the lack of adequate job creation. Labour markets have hardly progressed relative to the country's economic gains. In many regions, the rate of unemployment has increased, although a few have witnessed some improvement. The combination of high density settlements, the burning of biomass fuels, lack of piped water, temporary building materials and lack of access to municipal services, means that many urban areas are particularly prone to disasters and outbreaks.

3. SUSTAINABLE PLANNING

Sustainable city planning should aim at achieving social and environmental equity while improving the lives of the people. For that to happen we need to have a sustainable city form as well as provision and proper management of the services. Thus, in order for a city or urban area to be sustainable it needs to produce and manage basic services like water, waste, energy, and transportation in a way that it conforms to the principles of sustainable development. In other words, the city should be able to produce and distribute the services in an economic, environment friendly and equitable way

3.1 WORKING OF SUSTAINABLE PLANNING

Although sustainability will require agreements between many organizations in order to become operational, the fundamental building block for its survival is household and individual behaviour. A first step toward this change is knowledge of the environmental implications of our current behavioural modes. This may be accomplished through a number of channels of communication simultaneously.

- First, environmental education must be there. It should be made clear through this type of education that the environment is as important for our well-being as shelter from the elements and money in the bank.
- Second, each individual and household should be made aware of their impact on the environment through the measurement of their "ecological footprint" .

The technical challenges for an ecological city fall into three broad categories, among which there is always some overlap—these are water, energy, and materials.

These knowledge gaps can be summarized as:

- An understanding of the system as a whole
- An understanding of each particular individual's impact on that system
- Visible indicators of that impact at the household level

3.2 HOUSEHOLD WATER USAGE

The improvement of household water quality was probably the most important factor in reducing mortalities during the Industrial Revolution.. All households should have their water supply metered and higher prices should be charged for non-essential uses such as washing automobiles and maintaining water- demanding yards and gardens. As an industrial material, it should be charged at the full price for delivery and restoration for all commercial uses in industry and agriculture.

3.3 HOUSEHOLD ENERGY USAGE

Energy has also been made available very cheaply through the widespread use of fossil fuels, with no forethought of the environmental cost, such as acid deposition, climate change, ozone impacts on health.our modern settlements are comprised of thousands of separately heated and cooled buildings that are supplied by independent power plants requir- ing enormous amounts of water for cooling, while this warmed water is then dissipated into a nearby cold water body. Ideally, district or neighborhood- wide heating and cooling systems should be used for efficiency, but not within a system that removes choice of temperature from a particular build- ing or room.

We also need to replace the automobile as a mass transportation system with a public rail and bus system wherever it can be supported by the density of population. Because density is the key to efficient public transport, higher density must be maintained as an essential characteristic of our settlements.

4. IMPLICATIONS OF SUSTAINABLE URBAN DEVELOPMENT

The guideline for changing this incentive structure is that we should pay more, through pricing and taxation, for the activities that harm the planet and pay less for activities that make a positive contribution. A tax on carbon is one sweeping measure that could have immediate and far-reaching consequences. In the short run, it would drive the economy toward more efficient use of fossil fuels and simultaneously discourage non-essential or substitutable uses.]

This kind of tax would raise the cost of transportation, thereby giving local products (or substitutes) a pricing advantage over international trade. The world would become a more bioregional sort of place, as entrepreneurs would begin to re-examine local opportunities. The increased cost of transporting solid wastes far from the point of production would be yet another long-term beneficial side-effect of such a tax. These kinds of shifts would not happen easily because people would more than likely object to tax increases and overall price increases, along with diminution in their choice of goods.

A second change concerns the cost of labour relative to the cost of materials. Under the present incentive structure there is very little reason to conserve materials because they are inexpensive. On the other hand, labour is relatively expensive. This incentive structure has produced a “throwaway society” with a growing problem of solid waste disposal and a seemingly permanent body of unemployed; it runs counter to the recognition of the need to reduce, re- use, and recycle. If the full costs of waste disposal, including polluted water and polluted air, were paid for by the users of the goods and services that produced the wastes, then those costs would rise dramatically. It then makes economic sense to employ people to use, and re-use, materials more efficiently.

This shift would put people back to work to repair the damage they have done, and are continuing to do, to the planet. In this way, people could take care of the planet on which they depend, instead of continuing to abuse it with their thoughtless use of its resources. Positive initiatives to develop this opportunity should be encouraged at the local level.

5. EXAMPLES OF SUSUTAINABLE URBAN DEVELOPEMENT

One of the most comprehensive attempts to design a sustainable urban settlement was made by Ebenezer Howard with his plans for “garden cities”. Paradoxically, Howard's motivation was social improvement and his principal concern for sustainability was financial. Nevertheless, his design included details of land-use, transportation, and economy that would have been substantially greener than anything we have today. Since he worked in the pre- automobile age, everyone travelled by foot, bicycle, or train; his design called for plenty of green space within the urban area and surrounding agricultural land, which would provide most of the food and material needs of the city—a bioregion, in fact. Sadly, only the low-density land-use parts of the design were put into effect in his lifetime, and even those communities became absorbed into London's suburban sprawl. His concept was revived in the post-World War II development of new towns in Britain and continental Europe, but these communities involved a high percentage of automobile use and the local employment intentions were partly lost as the towns were drawn into the commuter sheds of the major cities. Nevertheless, the proposal remains on the table and it could be implemented today, as designed.

The town of Curitiba, Brazil, is frequently held up as an example of what could be achieved even in adverse conditions. In the 1970s, when the city embarked on its reform, there was already an unpromising mix of wide- spread poverty and reliance on the automobile. The city invested in a high-capacity public transport system based on buses running in dedicated lanes, hence providing a rapidity of travel that enabled it to compete with the automobile. The gradual extension of this service eventually won 75 percent of commuters to the bus system. Finding even one such example proves that the drift towards a deteriorating modal split, losing public transport commuters to the automobile, can be reversed if the will is there.

In Dorchester, England, there is an large extension of the town being built on a greenfield site called Poundbury. A driving principle behind the design of Poundbury is the provision of well-serviced neighbourhoods to which residents can walk to shops, and in which some of them would work, hence eliminating the need for most automobile-based trips. It is too early to know which activities will evolve in this experimental community, but at least the land-use design permits a very different travel behaviour option from the norm in the wealthier cities of the world. In terms of solid waste reduction through recycling, there are many examples around the world where schemes have been put in place which substantially reduce the volume of household waste that goes to landfill.

In Toronto, for example, a combination of composting and curb side collection of garden waste, paper, metals, and plastics can reduce household solid waste generation by 75 percent. However, the financial viability of these efforts depends on the value of the recycled materials and the markets for them are not yet mature. After several years as a voluntary measure, Toronto is now introducing compulsory metering of water use. On average, it is found that metering reduces household use by as much as 20 percent. These are only a few examples and nowhere do we see, yet, a determined move to make our urban settlements more sustainable. However, every successful change provides a demonstration effect that can be emulated wher- ever the political will can be found.

6. SUMMARY AND CONCLUSION

The notion of sustainable urban development is simple and appealing. It is also a necessity if human beings are to develop a sustainable lifestyle because more than half the world's population is already urban, and the trend toward further urbanization is strong, especially in the poorer countries of the world. However, we are a very long way from knowing how to turn the concept into practice

This paper has dealt with the issue of sustainable urban development and other aspects related to it The first discussions were on the present urban scenario and the concept & importance of sustainable development and especially that of sustainable urban development. There has been a lot of stress on need of development of the economy with social equity and protection and conservation of the environmental resources. In recent times, cities have become places of wasteful use of non-renewable resources and urban environmental degradation. This is likely to affect the water supply, air, soil; i.e. the ecosystems, among other things. Manmade pollution of water, air and environment seriously affect the climates.

Sustainable urban development and sustainable city form should and must, take account of all this and try to reduce the ill effects of climate change, depletion of non-renewable resources and degradation of the urban environment. Also the implementation is of as much importance as the issue of sustainable development itself. Urban form is important for sustainable urban development but equally important are the environmental friendly management of basic services like water-supply, sanitation and also of energy. The issue of equity in delivery of services is one important requirement of sustainable urban development, which should be kept in mind while planning for them.

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