PLANNING CONCEPTS AND DEVELOPMENT CONTROLS IN INDIA

Introduction

India’s strong historical past of more than 2000 years, in the form of civilizations and associated systems, of which town planning was a characteristic feature has been well researched by historians. Planning for cities in India dates back to the Vedic times with most of the cities like Patliputra, Varanasi, Nalanda etc were built on the basis of well conceived plans (Nallathinga, 2009). These were the concerted efforts of specific kingdoms or empires prevalent at various points of time in history rather than an outcome of documented and institutionalized procedures. Therefore, it is difficult to compare the ancient planning systems with the modern planning systems. This present chapter focuses on various planning concepts and development controls that have evolved along with the present day concept of master plan and in-built development controls in the post independence era.

Planning Concepts in Ancient India

Town Planning was developed and practiced as an art by our ancestors way back in 8000 BC when the small settlements evolved into about 100 large Indus Valley settlements following a hierarchy of cities, villages and outposts. Some of the legendary ancient cities along the Indus were Dholavira, Kalibangan, Rupar, Rakhiigarhi and Lothal - presently located in states of Gujarat, Haryana, Punjab and Rajasthan in India.

The two largest and most studied cities of Indus Valley civilization are Mohenjodaro and Harappa. Each of these cities was about 1 sq. kms in size with an estimated population between 23000 and 40000, with a density of about 90 to 160 people per acre, which is desirable even by today’s sustainability standards. These cities provided the first known examples of town planning, civil engineering, building design and construction in India. The focus was more on the spatial arrangement of houses for various classes residing within the city. The strategically safe areas were reserved for ruling or higher classes while the weaker sections resided in the outskirts. While setting the residential areas for the higher classes, attention was paid to the most frequent
prevailing wind direction. City Streets had a north south orientation, with a central market place and a small wall surrounded the city. A fortified citadel lay to the west and a larger ‘lower city’ to the east. The citadel included a massive brick platform, possibly to protect from flooding and housed granaries with loading bays, baths and an assembly hall. The lower city was laid in a grid pattern of streets having controlled widths, with shops and workshops lining the streets. Every house was linked to a main drain, with regular inspection holes for maintenance. Houses up to two storeys were built on plinths with brick stairs leading to upper floors or the roof. The typical residential unit was built around an open to sky court with entrance from side lanes, without any windows opening on to main streets. Houses were varied in sizes, but included cooking and bathing spaces partitioned within them. Larger houses had courtyards and private wells also (Ramanathan, 2011).

The planning of the ancient cities clearly demonstrated appropriate planning approach. Further the building controls ensured that the buildings in the cities followed a uniform approach and provided enough room for light and ventilation. It was ensured that all the houses followed a similar layout resulting in organized development. The controls provided structured development of the cities with commercial and residential areas separated from each other.

Thousand years after the deterioration of Indus settlements, the period between 1750BC and 750BC, ushered in the second most lasting urban settlements in the Gangetic Plains. New trade routes emerged and knowledge guilds were established and new coastal cities were developed during this period. Kingdoms were fortified and planning of the towns was mainly confined around the fort that formed the nucleus with subgroups based on occupation and caste organised around it (Ramanathan, 2011). Thooyavan (2005) explained in his book on ‘Human Settlements’ that the settlements built during this period were within the framework of strict rules and regulations laid down in Hindu Shastras and Puranas. Among these, the most important were the Silpa Sasthras and Kautilya’s Arthasasthra. These ancient treatises on town administration and architecture indicate how scientifically the art of town planning in the earlier ages was studied and practiced. Based on the predominant features and functions, the towns were classified as Nagara (District headquarters), Rajdhani (Royal Capital), Pathare
(Commercial town), Druga (Fortified, or small industrial town), Kheta (Town grown by local industries), Kharveta (Big industrial town), Sivira (Military encampment), Senamukha (Suburban military township), Skandavara (Military towns with imperial quarters), Sthaneya (Frontier Headquarters, fortified town), Dronamukha (Market town), Kotamakoraka (Hill / Forest site settlement). The cities were well planned and laid according to numerous patterns like Dandaka, Swastika, Padmaka, Nanyavartha, Chatmukha, Pratara, Karmuka, Sarvotthobhadra etc as shown in Map 3.1 and 3.2. Each of these types differs from the other in their shape, method of street planning and location of activities based on size and principal purpose of settlement. The whole area of the city was divided into zones, based on the political and religious hierarchy, thus determining the exact sites for the Royal Palaces, the council hall, market places, streets and lanes, gardens, temples, wells (1: 10 houses), reservoirs and above all the blocks of houses and wards for different communities and professions. The division of areas or zones was based on the system of “Padavinyasa” i.e. division of town into a number of blocks (or pada) set apart for a particular caste/ profession. But they had one thing in common and that was considerations they displayed towards the pedestrian. A person could conveniently transverse the whole width of the settlement.

Researchers like Kangle (1965), Rangarajan (1992) who studied and explored Kautiliya’s ‘Arthasasthra’ in the light of town planning mentioned that it was mandatory to have the width of main thoroughfares be adequately wide up to 4 dandas i.e. 24 feet in width and lined with trees for aesthetic and comfort values. A number of bye-laws and regulations regarding construction of buildings in the towns were also highlighted in their studies. Although many of them were very conceptual giving directions related to the planning of a town and house. Some of them worth mentioning are given below.

1) Basic controls like minimum plot size or land required for houses and height of the buildings were fixed based on the status of a particular class in the society i.e. low class population had smaller plots and low height houses and high class had larger plots and multistoried houses.
2) Ground coverage of plot was not supposed to be more than 50% of site with open front yard as wide as \( \frac{1}{3} \)rd of the plot.

3) No deviation from the fixed measurements of lengths, breadths and heights of the respective buildings of different classes of people was permitted.

4) Houses were provided with verandahs and flight of steps from the ground level lead to the high plinth of verandahs. One ‘vedika’ (raised seat) was constructed on each side of the door. Outside the house and touching it, a footpath (‘Vithika’) risen on both sides of the street was provided.

5) All the houses faced the royal roads and at their rear narrow lanes for services were provided.

6) Drains of sufficient slope and length were constructed from each house to the main drain.

The classification of towns based on their functions and existence of distinct areas for shrine, citadel, markets and gardens clearly indicates the concept of land use zoning being adopted while planning of settlements even in those days. The above listed rules shows how sensibly the ancient building controls were devised keeping in mind the light, ventilation, massing, aesthetics as well as health and privacy of the inhabitants. There are many examples which are still surviving based on these principles. Ancient core of Srirangam (Tamilnadu) on Nandavartha pattern and core city of Jaipur based on Sarvothobhadra pattern are the few worth mentioning examples.

Under the Mauryan and Gupta Dynasties between 750 BC and 700 AD, major growth of states and kingdoms took place. The two main centers of urbanisation during this period were Patliputra and Taxila. Patliputra, the capital of Mauryan Empire was a garden city surrounded by parks and ponds, with wooden structures dressed in stone. It had 570 towers, a wooden wall with 64 gates and a moat all around the city for defense. Drainage and fire protection systems were carefully planned. Taxila was the centre of religion, art and culture and centre of exchange between the East and West. Architecture had both the Gandhara and Greek influences, with narrow streets laid haphazardly in the city (Ramanathan, 2011).
Map 3.1: Patterns of Towns

- Dandaka
  - a - Shiva Temple
  - b - Jain Temple
  - c - Buddha Temple
  - d - Office and Court
  - e - Palace of King
  - f - Palace of Prince
  - g - Tank and Garden
  - h - Ganesh Temple
  - i - Kali Temple
  - j - Wall
  - k - Bastion with armory
  - l - Moat filled with water

- Padmaka
  - a - Temple
  - b - Shops
  - c - Palace of Kings
  - d - Meet Market
  - e - Shops
  - f - Tank

- Swastika
  - a - Shiva Temple
  - b - Jain Temple
  - c - Buddha Temple
  - d - Office and Court
  - e - Palace of King
  - f - Palace of Prince
  - g - Tank and Garden
  - h - Ganesh Temple
  - i - Kali Temple
  - j - Wall
  - k - Bastion with armory
  - l - Moat filled with water

- Nandyavarta
  - a - Temple
  - b - Tank
  - c - Palace of King
  - d - Court
  - e - Residences for Brahmans
  - f - School
  - g - Monastery
  - h - Hospital
  - i - Theatre
  - j - Residences for artists
  - k - Quarters for the other caste
  - l - Residences for hunters, fisherman etc.
  - m - Gates
  - n - Wall

Source: Rangwala (2005)
Map 3.2: Patterns of Towns

**LEGEND**
- Residential
- Commercial
- Public/Semi-public
- Water body
- Places of Worship
- Roads

**CHATMUKHA**
- a - Temple
- b - Blocks
- c - Gates
- d - Wall

**PRASTARA**
- a - Temple
- b - Tank
- c - Monastery
- d - College
- e - Hospital
- f - Residences for very rich
- g - Residences for rich
- h - Residences for middle class
- i - Residences for poor class
- j - Gates
- k - Wall

**KARMUKA**
- a - Shiva Temple
- b - College
- c - Hospital
- d - Monastery and Tank
- e - Bastion with armory
- f - Wall
- g - Moat filled with water

Source: Rangwala (2005)
The period after the Mauryan and Gupta empires till the time of Mughals (16th Century A.D.) was the period of successive invasions and endless strife among various rulers. The kingdoms established by Harsha, Kanishka, Mohammed Gazni and Mohammed Ghori were followed by a series of Muslim rulers in North India. During these times, planning was mainly confined to the establishment of well-fortified capital cities. These fortresses of these cities were impregnable, securing the safety of rulers and their accumulated wealth. Each of these fortress towns had a citadel where the well guarded residence of ruler, administrative offices, treasury and arsenal were located. The residents lived partly inside the fortress or just outside and were protected by the rulers. The splendor, art and culture of that period were reflected in the palaces, temples and other public buildings (Thooyavan, 2005). The closely packed buildings and network of narrow streets effectively provided shelter from sun and hot dust laden winds and also acted as protection from enemy. The fort and city walls dominated the skyline of towns as from miles away the forts and its battlements appeared on the horizon as symbols of impregnable cities. Jaisalmer in Rajasthan and Golconda in the Deccan are good examples of such fortress towns.

**Planning Concepts in Mughal Period**

The Mughal Period, starting from 16th century and lasting over 300 years, brought a comparatively settled period when city planning covered not only capitals but also defense outposts, trading establishments, ports and military cantonments (Thooyavan, 2005) Ramanathan (2011) categorized the towns of this period into four categories i.e. Administrative (Delhi, Lahore), Religious (Varanasi, Mathura), Military/Strategic (Attock, Asirgarh) and Trade (Patna, Ahmedabad). A separate department existed for the construction and development work during the reign of Akbar and Shahjahan (Rangwala, 2005). The emperor himself headed the department and it included eminent architects, engineers and ministers as its members. It brought a new sensibility and symmetry to planning by introducing gardens, courtyards and water channels into the planning of public and private spaces. Subsequently, all the other Muslim rulers also maintained a separate section and pushed ahead the process of town planning according to their own ideas to fulfil the requirements of public spaces. While the mughals stamped their religious and cultural identity on the built form in India, city
planning was mainly done in accordance with the principles of Shilpa Shastras. Security considerations also impacted the design and construction of houses. One of the chief features of these towns was the peculiar construction of houses which was arranged so as to make the locality safe against internal penetration (Ramanathan, 2011). Shahjahanabad (Delhi) built by Shahjahan in 1648 and Jaipur established by Raja Sawai Jai Singh II in 1728 are good examples of cities developed during this period.

Planning Concept in British Period

The continuity of town planning broke with the decline of Mughal Empire in India and the pattern of planning took an entirely different course under British colonial rule. The implementation of European concept of planning and controls had a great influence on town development in India (Nallathinga, 2009). Britishers during their rule over India have estimated the need for evolving the cities to serve the economic needs of their mother land. During the process, they had laid principles for organization of settlements, lying of infrastructure, legislation for legal validity of planning proposals. The system was mainly designed to serve the economic interests of the Britishers first and the social interests of Indians later. Therefore, it had several undesirable features associated with it. A clear division of areas was visible between Victorian grandiose of the ‘rulers’ within the city and contrasting poor neighbourhoods resided by the ‘ruled’ i.e. the general public. (Mehrotra, et.al., 1995).

Thooyavan (2005) in his book categorized the British towns in three categories i.e. Cantonments, Provincial capitals and Hill stations. Cantonments were established along the main routes and at strategic places in all parts of the country. Some of the important cantonment towns were Bangalore, Dehradun, Kasauli, Firozpur etc. These were permanent army camps with small civil population serving them. The areas were planned with wide roads in a grid pattern disconnected from their surroundings, with low density housing laid out strictly according to ranks, along with parade grounds and other facilities for the use of army personnel. The provincial capitals were administrative and commercial centers which subsequently developed into industrial centres such as Chennai (Madras), Mumbai (Bombay), Kolkatta (Calcutta), Allahabad, Lahore and Nagpur. In these towns, the residential area of the Britishers were clearly
separated from those of the native population and areas reserved for the white population were distinctly better with regard to the layout and amenities. Hill stations were developed both in the North and South India (Simla, Dalhousie, Nainital, Darjeeling, Kodaikanal etc) as places where governors of provincial capitals and other British officials spend their summer months away from the hot plains. These picturesque hill stations were laid out with spacious bungalows, gardens and wide roads and avenues. The residential areas for the native population were at the lower levels with very little amount of planning and infrastructural services.

The Britishers had been able to introduce dual character to cities, where their residential areas were separated from those of the native population in the congested core. In the areas developed by Britishers, streets were no longer an integrated element of neighbourhood, but were used as the dominant elements that fragment spaces. While traditional houses were set against the streets with an internal private courtyard and built in close proximity to each other, the colonial houses had setbacks on all sides leaving no room for internal courtyards. Houses for the British were far flung and built on larger plots, lined along road networks (Ramanathan, 2011).

The first effort in the direction of urban development and planning regulations made by the Britishers was through the appointment of Sanitary Commission in 1864 for the three provincial capitals (Madras, Bengal and Bombay). Under the Bombay Municipal Corporation Act of 1888, building regulations were first introduced and in 1898, the first Unitary Improvement Trust (UIT) of India was established in Bombay for planning the city (Ramanathan, 2011). The Punjab Municipalities Act 1911 provided the provisions for preparation of town planning schemes by the Urban Local Bodies (ULB) in both private and municipal lands for providing housing with secured sanitary conditions in Punjab region. Another town planning legislation, Bombay Town Planning Act, 1915 enabled the preparation of land use plan within city limits. Subsequently, the governments of princely state of Hyderabad in 1916, United Provinces in 1919, Madras in 1920 and Punjab in 1922 have enacted town planning legislations for their respective states, thus paving the way for introducing Town Planning Schemes for future expansion. The main focus of these schemes was to develop residential, commercial, industrial land uses in different areas. However, it
emerged later that these schemes did not ensure comprehensive development of cities as expected (Thooyavan, 2005).

Planning Concepts in Post Independence Period

After Independence, India adopted the British Town Planning System by adapting it as per the requirements of the Indian cities. According to TCPO (1996), the 2nd five year Plan (1956-61) largely placed the responsibility of planning on the state governments. It was emphasized that if planned urban development is to be undertaken, then each state should have a phased program for the survey and preparation of Master Plans for all important towns. It was also identified that in order to get the task of preparation of Master Plan accomplished, town and country planning legislation and necessary mechanism for its implementation need to be enacted in all states. Since most of the Town Improvement Acts in various states did not had provisions for preparation of master plans, therefore a need was felt to have a comprehensive Town and Country Planning Act on the lines of the British Town and Country Planning Act 1947. As a result, a Model Town and Regional Planning and Development Act in 1960 was formulated by TCPO to deal with the subject of planning (regional, urban and rural) and development policies. The major provisions of the Model Act include provisions for preparation of comprehensive Master Plan for urban areas; constitution of board by the local planning authorities in state to advise and coordinate in the matter of planning and provisions for implementation and enforcement of Master Plans in the state. However momentum to prepare Master Plans was generated during the 3rd five year plan (1961-1966) when central government provided 100% financial assistance to state governments to set up town planning departments. This was done for the preparation of Master Plan for all cities and towns under the legislative framework based on the Model Law formulated by the TCPO in 1960 (TCPO, 1996). Presently, most of the states have their own legislations based on this model such as State Town and Country Planning Acts, Urban/ Metropolitan Development Authorities Acts besides the Municipal Acts which enable preparation of Master Plans/ Development Plans, Regional Plans, Zonal Plans, Town Planning Schemes, Urban Development Projects, implementation of Central and State sponsored schemes, framing of rules and regulations by state governments and local bodies with necessary variations to suit their local, regional and
state practices. These acts have mandated the preparation of Master Plans for the proposed development of cities for the next 20-25 years and undertaking development in the areas that have been declared as development areas.

Master Plan involves estimation of future population, social economic conditions and infrastructural needs along with land use plan (present and proposed) and development control restrictions for ensuring that the necessary facilities are in place when the development takes place. Master plan is a statutory document that is approved, enforced and implemented for controlling, directing and promoting sound and rational development or redevelopment of an urban area with a view to achieving maximum economic, social and aesthetic benefits (Nallathinga, 2006). The scope of master plan as defined by TCPO (1996) is confined to broad proposals and allocation of land for various purposes such as residential, industrial, commercial, recreational, public and semi public for guiding and regulating development in urbanisable area over a period of time. Dis-aggregation of Master Plan proposals is done through zonal development plans and in-built development controls. Zoning and Sub division regulations are a part of Development Control Regulations (DCR) under Master Plan. They stipulate the densities of the development in various pockets of urbanisable land through Floor Area Ratio (FAR) or Floor Space Index (FSI), maximum ground coverage, maximum height permissible etc. Building Byelaws is a separate document governed by the regulations given in Master Plan that guides and controls the setting, design and construction of the buildings with due recognition for ventilation, light and built envelope requirements from health and sanitation perspectives.

As per Census of India 2011, the total number of towns and cities are 7935, out of which 4041 are statutory towns. TCPO (2011) reports that the number of approved master plans available in the country is 1233 and about 657 master plans are under various stages of preparation. This means that although the concept of Master Plan is in practise for the last five decades, only 24% of cities and towns have master plan and more than ¾ of the urban settlements are growing without any spatial plan and planned interventions. It is important to note that only 47% of statutory towns have approved Master Plans, based on the assumption that the 657 Master plans under preparation get
approved shortly (Kshirsagar, et al., 2012). But the extent to which these plans have influenced in shaping urban form and structure of our towns is a matter of debate.

According to Philip (2007), in spite of the fact that Master Plans and Detailed Zonal plans have been notified for urban areas, cities are characterized by chaos, congestion, narrow roads, dilapidated buildings and lack of parking spaces. It is to be noted here that the development authorities and municipalities are not the only agencies working for planning and development of urban areas. For providing the much needed infrastructure, different nodal service providing agencies like Water Supply and Sanitary Boards, Housing Boards, Slum Clearance Boards, Industrial Area Development Boards, Electricity Board co-exist. A coordinated and structured collaboration with these agencies is essential. Lack of coordination among these agencies is responsible for violations of development controls, thus putting impact on housing and traffic which further leads to unauthorized developments and congestion (Swamy, et al., 2008).

It is evident from the review of the urban development and planning regulations and experiences that over the past decades, the conventional forms of urban development and planning regulations have failed to provide orderly and sustainable urban development (Sengupta, et al., 2012). Despite the various planning legislations that have been put in place, urban development has been haphazard and disjointed. As a result, violation of development controls, squatter settlements and informal sectoral activity have continued to mushroom due to inadequate and incompetent development control mechanisms.

As identified by Government of India (1996), in spite of deficiencies in the Master Plan approach listed below, there is no alternative to land use plan.

- Rigid, static and regulatory nature of plans
- Long term plan period - projections for longer duration (20-25 years)
- Long time taken for plan preparation
- Weak Database and non-availability of Base Maps
- High norms and standards
- Time consuming process
- Lack of co-ordination among service providing agencies
- Ineffective Public Participation
- Lack of monitoring mechanism
- Rigid process of modification/ removal
- Lopsided plan implementation
- Mismatch of growth projections and sectoral needs
- Neglect of development of urban fringe
- Lack of cooperation and coordination among implementing agencies

Apart from the short coming listed above, research over the one and half decade (Jain, 1997; Jain, 2010; Philip, 2007) indicates that Development Controls that forms a part of Master Plan are restrictive in nature and do not take considerations of prevailing socio economic realities of people. These are too static, inflexible and hardly accommodate the urban poor or adapt itself to increasing pressure on land, soaring land value and advancing technology. Development Controls are also viewed as an unnecessary interference in private property rights as it interferes with the individual freedom to build according to their choice. Rigid rules coupled with laxity in enforcement create havoc in the system. In addition, where regulations have been enforced, they are seen as distortions into land and housing markets, which result in higher costs. It has been argued that traditional land use planning has justifiably been discredited and must take a share of the blame for illegal developments and inadequate service provisions.

Risbud (2011) while conducting state level case studies for cost reduction by regulations and guidelines in India highlighted that many regulations in India are old and framed without any affordability considerations. Almost 95% of the regulations are focused on new greenfield developments rather than redevelopment. It has been highlighted that the enforcement of regulations has been weak and eroded by massive growth of illegal land subdivisions in all cities which resulted in high standards for
minimum plot sizes. In the context of high land prices, housing became unaffordable for middle and low income groups and resulted in unauthorised colonisation and illegal commercialisation. This is accompanied by state’s policy of regularizing illegal and unauthorised development either through Act or through administrative policy thus making the planning exercise whole planning exercise irrelevant and futile.

_Bertaud (2002)_ explained that the combined effect of multiple layers of poorly conceived regulations has contributed to an artificial urban land shortage. In addition, some regulations have negative impact on the spatial structure of cities. By unreasonably reducing the amount of floor space i.e. prescribing the low FAR that can be built in centrally located areas and by making land recycling difficult, some regulations tend to push urban development toward the periphery. As a result, commuting trips becomes longer, operation of public transport becomes difficult and urban infrastructure needs to be extended further.

As evident from the studies of _Risbud, 2011; Sridhar, 2007_, the Floor Area Ratio (FAR) values in India are very low as compared to major cities around the world. Typically, even in centrally located areas FAR in India are seldom above 2.0 compared to values ranging from 5 to 15 in the CBD of other cities of Asia. This tends to increase the consumption of land as more land is required to build the given area of floor space. This affects low and middle income households more than others and in the non residential sectors contributes to a loss of productivity. According to the _TCPO (1999)_ in Indian cities the FAR determines the total built up space that a plot is allowed to hold, subject to the land availability and requirements, household densities and dwelling sizes and availability of parking. In most large cities of the world, as technology and infrastructure improves, the FAR in the city tends to increase. One could argue that existing infrastructure in developing countries is insufficient and so higher densities (presumably brought about by higher FAR) cannot be absorbed, which appears to be the basis of TCPO’s stated guidelines. But it is to be noted that whether density would increase or decrease following an increase in FAR depends on the FAR-elasticity of demand for built area. If there is a more than proportionate increase in built area in response to an increase in the FAR, then population and/ or employment density increases. The infrastructure will then have to be redesigned and rebuilt in the areas
where a large FAR increase is projected. *Bertaud (2002)* explained that the progressive increase in FAR serves two purpose, firstly it allows households and firms to consume more floor space as their incomes increase without moving to new areas or in the suburbs and secondly increase in FAR contributes to decrease in the city spatial expansion (suburbanisation) and commuting costs. The same views has been expressed by Sridhar (2007) in reference to land use regulations that population gets attracted to the areas where relaxation of FAR norms exists. This means that in order to make better use of existing infrastructure (water supply, sewerage, roads etc.) in Indian cities, state and local governments must consider increasing the FAR with time so that more floor space can be accommodated in the already developed or newly developed areas. This way excessive city growth and urban sprawl can be contained, commuting can be reduced and housing along with other facilities can be made more affordable.

In addition, the general principles that justify specific value for the FAR at specific locations should be revised. For this guidelines shall be provided to urban planners to help them regulate FAR in a manner that is consistent with an efficient and market driven urban spatial structure. As suggested by Bansal (2012) especially with reference to Indian cities, the concept of additional FAR Factor shall be based on ‘creativity’ and ‘context’. In such cases, the creativity is defined as design parameters including urban form, parking provision, pedestrian safety and impact of design on services and environment. The context is defined as local attributes like location with respect to land use as given in Master Plan, accessibility, level of congestion on the approach road etc. Normally maximum permissible FARs (with additional 5% as compoundable) are specified for various use premises in the Master Plan which is generally revised upwards over a period of time as part of extensive modification to the Master Plan. The same can also be applied to land subdivision regulations where the quantitative parameters like minimum plot size, streets right of ways etc should be carefully audited, taking into account their impact on development costs, land affordability and environment.

In India, Building Byelaws provide a uniform building code for construction of buildings by getting the legal support under the respective Municipalities Act or Authority Act as the case may be. Building code is a document containing standardized
requirements for the design & construction of almost all type of buildings, with an objective to protect the health, safety & welfare of the occupant. Building byelaws expresses all aspects of construction including structural integrity, fire resistance, safe exits, lighting, electrical, energy conservation, plumbing, sanitary facilities, ventilation, seismic design and correct use of construction materials. They also provide broad planning norms such as size of rooms, building height, setbacks, coverage, floor area ratio for different sizes of plots in different use zones, the requirement of light and ventilation, thickness of walls, floor, provisions regarding stairways, passages, lifts, elevators, etc for various types of buildings. Currently Building Bye-Laws are based on the National Building Code which was first published in 1997 and revised in 2005 (Das, 2007).

*Government of India (2011)* under JNNURM Rapid Training Programme highlighted that although modern building bye laws are framed to ensure greater compliance with the planning/ zoning and structural requirements, there are several pitfalls associated with their design, practice and implementation at local level. Such pitfalls like rapidly changing technology, excessive control and rigid specifications; ambiguity and discretion; coordination hurdles; lack of transparency; corruption which in turn have led to the creation of an inefficient system.

While examining the degree of compliance with the required regulations, the extent to which people are aware of the existence of these regulations is important because it partly determines the extent to which people will comply with these regulations. The lack of awareness is one of the main causes of building violations as people carry out the construction without being aware that their activity would result in violation of building bye-laws. Public participation in plan preparation process is emphasized time and again by researchers over the years (Boake, 2006; Chotani, 2012; Dewal, 2006; Jain, 1997; Jain, 2010; Nallathiga, 2009; Rakodi, 2001; Thomas, 2001) in a way that it should not be confined only to inviting the public objections and suggestions after Draft Plan Preparation. In fact, the requirement of greater public participation/ stakeholder consultation at every level and stage of the urban planning process starting from notification of the intention of plan preparation to plan implementation, enforcement and review has been highlighted. Such practices are being
followed in Singapore and Malaysia as they are helpful in preparing the plan as people’s product (World Bank, 1989).

A number of factors that contribute to non-compliance of the development control regulations in India as enlisted by researchers in their studies (Chandira, 2007; Gupta, 1992; Gupta, 2002; Jain, 1997; Jain, 2002; Poulase, 2007) are as follows–

- Failure of planning process to take account of ground realities and reset the planning guidelines, thus resulting in supply side shortages in terms of legitimate spaces for various land uses.

- Weak enforcement machinery is responsible for the non-implementation of building laws and regulations. Implementation of development policies has been characterised by delays and poor execution of projects and programmes by nodal service providing agencies, lack of institutional and inter-sectoral coordination framework for development planning and the inadequate participation by the beneficiary population.

- Unrealistic and cumbersome regulations including complex development control norms and building byelaws along with long drawn approval.

- Absence of proper standing of institutional mechanism for seeking justifiable modifications/relaxations vis-a-vis the existing building code and land use regulations. In recent years, there has been considerable debate and criticism levelled at the management of local government and legal system as it does not provide for quick and apt resolutions of building violation issues, which result in delays and misuse of the system.

There are ways as suggested by Farvacque, et al., 1992; Jain, 2010; Rakodi, 2001 that can improve the enforcement of development regulations and are listed below:

- Simplification of development control requirements by simplifying procedures and introducing appropriate policies/zoning regulations while safeguarding the health and environment and not damaging the economic base of the activities concerned.
• Revisiting the principles on which development control is based. As in case of zoning systems, certainty for developers is achieved at the cost of inflexibility for unforeseen demands and needs; while in discretionary systems flexibility to accommodate rapid and unforeseen changes comes at the cost of uncertainty and greater opportunities for corruption. It has been recommended that a system needs to be evolved to achieve a workable compromise between these principles.

• Strengthening the enforcement capacity to monitor and take action on illegal developments and violations of development controls. In order to improve the efficiency and effectiveness of development controls, it is important that rather than devoting resources to improving the quality of urban spatial plans and development regulations, urban managers should concentrate on governance. It is necessary to make the whole system of plan formulation and implementation more dynamic and responsive to changes. For this, the planning legislation will have to be modified, updated and made more citizens friendly.

Conclusion

Urban planning does not end with the preparation of a Master Plan. It is a continuous process and not an event of making a plan and getting it sanctioned and implementing it within a time frame. There is a fundamental difference between the developed and developing countries regarding the potential effectiveness of the whole Master Plan approach, as a primary step towards urban improvement. In most of the developed cities, a set of basic assumptions – the social and civic standards are usually quite well understood and therefore widely accepted. It is implicit in their master plans that certain minimum physical standards of housing and services which are both desirable and feasible. The growth trends could readily be projected and the established economic base of the city continues to provide increased employment and adequate tax resources, with little public intervention beyond zoning and services. Whereas in developing countries, the fundamental economic, social and demographic assumptions are hardly beginning to be clarified, in terms of viable urban standards. The answers to questions like what would be the affordable overhead investment per capita, how to
spend that amount to provide reasonable urban living conditions, what should be the urban pattern from social conditions viewpoint etc, are still not being made available to the planning team at the time of preparation of Master Plan.

In India, where planning is completely a government responsibility, a school of thought have emerged that the government or the planners should only be responsible for the maintenance of public spaces and should not interfere in the functioning of private residential areas or even privately owned commercial spaces. The residents of an area understand their needs and should be left free to decide their plans of construction and management and disposal of their properties. It is the market forces of demand and supply that should be allowed to determine what is the most appropriate use of land.

In a rapidly evolving urban environment, it is very difficult to maintain the master plan and in-built development controls in the best of times. Therefore a research is going on to have a flexible system and stress on comprehensive development plans for sustainable development. Master Plan as a tool for urban development planning cannot be done away with; rather the need is to make it more dynamic, realistic and effective. This is possible only with greater involvement of people and improvement in urban governance. The studies over the years have analyzed the impact of land use regulations recommended that the needs and conditions of development in developing countries require a more flexible set of standards than what has been introduced based on European experience. These standards must consider the rapid changes in the urban fabric, relate more to local conditions and be easier to implement. It is important to identify simple design paradigms that encapsulate the overall strategy and implement them through strategic interventions that have multiplier effects. In the end it is important to note that with all this discussion, all the three research hypotheses framed during the initial stage of the study has been strengthened i.e. Development controls are important and necessary so as to promote public health, safety, moral and social welfare of the community by securing the right use of land and buildings in a regulated way; weak enforcement mechanisms leading to increasing violations and limited need based flexibility in development controls is important. The chapter has been able to provide
the necessary direction and has laid the path for better understanding of the situation for discussing the development controls with respect to Delhi in the following chapter.

References


