CHAPTER 4

THE DEVELOPMENT OF PARKS, OPEN SPACES AND GREEN AREAS IN BMA
CHAPTER - 4

4. THE DEVELOPMENT OF PARKS, OPEN SPACE AND GREEN AREAS IN BANGALORE METROPOLITAN AREA

The intention of this chapter is to understand how Bangalore evolved and the problems that were created by urbanization as it applies to open spaces and green areas. The various parks, open space and green area types are identified and discussed.

4.1 BANGALORE: MUD FORT TO SPRAWLING METROPOLIS

(a) Kempe Gowda to Tipu Sultan (1537 AD to 1791 AD): The Fort built by Kempe Gowda I was of modest dimensions with mud as the main building material. Within the fort the town was divided into Petes or localities such as Chickpete, Dodpete, Balepete, Cottonpete and other areas earmarked for different trades and artisans. The town had two main streets, Chickpete Street ran east to west and Dodpete Street ran north to south, their intersection forming Dodpete Square, the heart of Bangalore (Ribeiro, 1999, p. 28). Kempe Gowda I encouraged the construction of temples and lakes and planned residential layouts, or agraharams, around each temple. The construction of the mud fort and several temples and lakes transformed Bangalore from a sleepy village to a centre of culture based on Hindu religion (Issar, T. P. 1998, p. 238). Kempe Gowda II was an able successor to his father under whom Bangalore developed in the tradition of the Vijayanagara cities, a mosaic of bazaars, temple complexes and agraharams. He also built the four famous towers that marked Bangalore's boundary. Kempe Gowda II suffered a crushing defeat at the hands of the Bijapur armies led by Shivaji in 1638 AD who made Bangalore a centre of Maratha culture (Jayapal, Maya, p.16). Bangalore, though, soon fell to the Mughal army under Khasim Khan in 1687 AD, who leased the city and the surrounding areas to Chikkadeva Raya Wodeyar in 1690 AD. Chikkadeva Raya Wodeyar (1673 AD- 1704 AD) built an oval shaped fort south of the old mud fort. After the death of the Wodeyar in 1704 AD, Hyder Ali usurped the throne and ruled Mysore with his son Tipu Sultan until the British defeated him in 1790 AD. Hyder Ali got the oval Fort in the south rebuilt in stone (Jayapal, Maya, p.25). The palace started by Hyder Ali was built within this Fort and was completed by Tipu. The town was about 5
kilometers in circumference, with the Fort at the south end, with well-planned streets and the south end, with well-planned streets and prosperous shops indicating a flourishing economy (Jayapal, Maya, p.35). (A big market stretch from the north gate of the town to the oval Fort, a predecessor of today’s Avenue Road.) Hyder and Tipu also contributed towards the beautification of the city by building Lalbagh Garden in 1760 AD. Under them Bangalore developed into a commercial and military centre of strategic importance.

(b) Colonial Period (1791 AD to 1947 AD): The British found Bangalore to be a pleasant and appropriate place to station their garrison and thus a cantonment was built. It was separated by a 11.5 km wide strip of open land, from the ‘native town’ or Pete. Maya Jayapal explaining the origin of the word cantonment says -

"The origin of the word ‘Cantonment’ is from the French canton, meaning corner or district. It has become, through usage, an Anglo-Indian word and is applied to military stations in India, built usually on a plan, which was originally that of a standing camp or cantonment. Each cantonment is essentially a well defined and clearly demarcated unit of territory set apart for the quartering and administering of troops" (Jayapal, Maya, p.49).

The British built cantonments primarily for security and health. With the defeat of Tipu Sultan the British became the foremost power in south India. Bangalore ceased to be a strategic citadel in the medieval sense and instead became a British Cantonment. Bangalore Fort slowly passed into oblivion, the fort walls crumbling down in stages to make way for the expanding city. The Parade Ground, surrounded by a ride or mall called Rotten Row, was more or less the heart of Bangalore Cantonment (Jayapal, Maya, p.54). Around this grew the Civil and Military Station. A civilian population of lower economic strata, attracted by the opportunities for employment and trade and offering subsidiary services to the military personnel, settled in a high density and congested, unhealthy locality. The British had little concern towards these people. This area evolved into a general bazaar called Blackpally, which is today’s Shivajinagar area (see Image 4.1). According to M. N. Srinivas some parts looked like a small Tamil town like Vellore, with houses having Tamil style verandas facing the street. These verandas were important spaces to socialize and also to segregate the private areas of the house from the outside. There were also slums on the outskirts of the colonial city like Pottery Town (Srinivas,
M. N. 1994, p.17). According to P. D. Mahadev the colonial city unintentionally helped decongest the old native city and also provided the much needed ‘lung space’ (Mahadev. P. D. p. 243). Several developments, led to the rapid growth of the city. The most important of these being the telegraph connections introduced to and from Bangalore to all the important cities of India in 1853 AD and the rail connection to Madras in 1864 AD. Hence with city walls gone and unprecedented growth of the city it began to sprawl into the countryside unchecked. By 1881 AD, Bangalore had two nuclei: one a high-density area around the Fort and its market (K.R. Market area) in Pete and the second Blackpally (Russel Market area) within the colonial city. Both of these comprised the inner city of Bangalore with Cubbon Park acting as a large green buffer. Several suburbs were built at the turn of the century.
In the 19th century, Bangalore *Pete* (town) and the Cantonment, or the Colonial City both followed their own traditions of urban form and thus evolved different sets of public spaces. However, each presented a highly characteristic urban structure: the Indian city continued the medieval tradition of high-density, mixed-use neighborhoods with temple squares and markets forming nodes and open spaces in the otherwise close-knit urban fabric; the British on the other hand adopted the cantonment type urban form, which was the antithesis of the Indian city. In contrast with the narrow meandering streets of the Pete, the cantonment developed with wide tree-lined avenues and spacious bungalows. The mall, parade ground and park were some of the public spaces that were developed in the colonial city (see Plate 4.1).

By 1812 AD the colonial city developed as a low density “Garden City”, with a parade ground, clubs, churches, bungalows, shops, markets, cinemas, and parks and other open spaces (see Plate 4.2) interspersed by water bodies. The colonial city had a strong European character, with public life and thus public space centered on and around South Parade. South Parade, today’s M.G. Road, and the area around it became a fashionable mall with bars and restaurants and all sorts of shops catering to European tastes with Blackpally catering as a bazaar for everyday needs (Jayapal, Maya, p 54). A bridle path also existed around Parade Ground, which was a popular place to promenade. Cubbon Park, which was developed in 1864 AD on about 120 hectares of land, was a popular public space for people from both the Pete and the cantonment (see Image 4.2 & 4.3). Besides Cubbon Park several smaller parks were developed in the colonial city, which were popular community spaces. Also an amusement park called ‘Hollywood City’ was set up on Police Parade Grounds during the Second World War and a skating rink owned by a Jewish family existed at the corner of Cubbon road and Curzon road.
The streets in the cantonment were important public spaces and were straight and wide designed for vehicular traffic, but of a different kind from today's motorized traffic. The streets had slow moving traffic with plenty of space for pedestrians and bicyclists. Cars were introduced in Bangalore in the beginning of the 20th century. The car, scooter and motorcycle slowly replaced the carriage and bicycle as the preferred mode of transport from the 1960's onwards and the quality of the streets as sustainer of traffic rapidly deteriorated.

The colonial city was developed on the “tower in space” model of urban development. But in spite of this it had a strong image (Vagale, Uday. 2004, p.37). Firstly South Parade, which was the centre of the colonial city, had a very strong character of low-rise commercial buildings facing a parade ground with a bridle path around it. This formed a highly imaginative city centre. Around this grew residential neighborhoods and the cantonment proper, which had a strong colonial character and were divided according to status and class. The whole city was interspersed by parks and lakes, which formed nodes throughout the city. Cubbon Park, which separated the Indian city from the colonial city, formed a major edge. Finally the juxtaposition of the high density compact Indian city and the low-density sprawl of the colonial city made them unique and characteristic due to the contrast between them (Ibid, p. 38).

As per the writer, T. P. Issar, it was an era of spacious bungalows with vast stretches of Gardens and Lawns which evolved a culture of “Garden Parties” during British occupation. Rows of trees were planted and grown along St. Marks Road, Museum Road, Residency Road, Richmond Road, Ulsoor Road and Trinity Church Road in the first half of this century, thus providing cool canopy of tree tops to the comfort of the residents. “Garden City” became synonymous with Bangalore at this time because of this trend. During the second half of the 20th century the garden and tree culture spread to Cunningham Road, Millers’ Road, Palace Road and Maharaja’s Bangalore Palace (1862).

The only feature that tied the two cities was the ‘Garden City’ image, which was pursued in the colonial city and the suburbs of the Indian city. Bangalore’s ‘Garden City’ image originated with the development of Lalbagh Garden. In 1908 Krishnaraja Wodeyar IV appointed Mr. Krumbiegel as the Government Horticulturist. During the period from 1908 to 1932, he not only developed the Lalbagh Garden but also beautified the entire
city. He planted several avenue-trees along streets and promoted the idea of “serial blooming”. Dr. Mari Gowda who succeeded him continued his good work (Issar, T. P. 1998, p. 60). Bangalore’s parks and lakes along with the spacious bungalows all combined to enhance its image as a ‘Garden City’. Bangalore continues to be called a garden city although few parks and lakes have been added to the city in recent years and the existing ones have suffered neglect and high-rise buildings have replaced many bungalows. A concerted effort however is underway to improve the existing open spaces and enhance Bangalore’s ‘Garden City’ image.

The street being the primary public space developed as a boulevard with wide pedestrian space to stroll and window shop, ample tree canopy provided shade from the summer sun. In a continuing bid to slow down Bangalore’s growth and divert some of the development pressure to other cities, satellite townships were developed and it was proposed that counter magnets to the city be encouraged. Besides pressure on infrastructure and congestion in the city there was a gradual loss of public space due to developmental pressures. Lakes were filled up with debris for development, parks were encroached upon and insufficient open spaces were allocated in the newly allowed developments in fringe areas.

(c) Post Independence (1947 AD to Present): In 1947 India gained independence and the Indian and colonial cities were merged in 1949. Bangalore has since remained and developed as the Capital of Karnataka State. Bangalore continued to grow and several public sector industries were set up from 1940-1970 transforming it into a science and technology centre. By 1961, Bangalore had become the 6th largest city in India with a population of 1,207,000. Between 1971-1981, Bangalore’s growth rate was 76 percent, the fastest in Asia. By 1988 the Electronic City had been developed and Bangalore emerged as India’s Software Capital. Consequently the 1990’s saw a construction boom fuelled by Bangalore’s growing reputation as “India’s Silicon Valley”, which saw many young professionals migrate to the city. Bangalore continues to grow at a rapid pace and today the city has expanded into a large metropolis, an international technology hub specializing in Aerospace, Information Technology, Biotechnology, and Science and Technology. Today Bangalore’s population

85
stands at roughly 7 million; in addition, there is a huge and increasing floating population.
Though Bangalore grew in all directions, pressure has been particularly intense on the
inner city, which continues to grow with two nuclei, though over the years this distinction
has blurred. One is the very high-density area around the city railway station and K. R.
Market and the other being the M. G. Road and Russel Market areas. The stress in these
areas is very intense, especially on public spaces such as streets, as the outward growth of
Bangalore continues. Even today Bangalore comes across as an unstructured city without
any grading of amenities. Attempts have been made to introduce ring roads and radial
roads to give it a structure. In addition, attempts to decongest core areas have been partly
successful with new satellite commercial centres developing in the better-planned suburbs
(see Image 4.4) with lot of avenue trees, parks and playgrounds.

Bangalore has created abundance of park and avenue trees, which provide shade and meet
the purely ecological needs but also an imaginatively planned ambience of sequentially-
blossoming trees. Cameron, Krumbiegel, Javaraya and, more recently, Mari Gowda, who

conceived and planned the City's gardens and avenue trees, have left for us a kind of *Ritusamhara*, a year-long "programmed" show of consecutively blooming flowers. They mix well with the flowering trees while providing shade to almost the entire width of the road. For example, **1927**: Silver Jubilee Park was laid along Narasimharaja Road in honor of Sri Krishnarajendra Wodeyar IV during the Silver Jubilee Celebrations of his reign. **1970**: Municipal Corporation was maintaining 13 major parks (excluding Lalbagh & Cubbon Park), 30 Minor parks and 52 Circle Gardens. **1998**: Bangalore Mahanagara Palike is maintaining 250 gardens falling under 12 ranges, under the care of 858 personnel, whereas, Horticulture Department of Government of Karnataka is maintaining Lalbagh, Cubbon Park, M.N. Krishna Rao Park, Kumara Krupa Guest House Gardens, Balabrooie Guest House Gardens, Rajbhavan Lawns, LRDE Musical Fountain, Ministers’ Bungalows and Government Hospitals.

Anyone who has traveled around in India will admit that the term ‘Garden City’ certainly holds for Bangalore. Compared to several other concrete jungles of the country, Bangalore certainly is green. One of the first things that any first-time visitor to Bangalore notices is the large number of trees in the City. On the other hand, whenever one looks at the old pictures of the City, the drastic change that has taken place is stark.

### 4.2 STRUCTURE OF BANGALORE CITY

After independence the two cities were merged and both types of public spaces, traditional and colonial, became familiar to the citizens. Traditional families continued to prefer the *Pete* area, which supported their life style, while the more westernized citizens found the cantonment area to be more to their liking. In spite of the differences between the public spaces of the two cities one can draw parallels between them – for example the parade ground was similar to the *maidan*, spatially at least. Like wise the bazaar street was similar to the mall in function, if not spatially. The two old nuclei though, did not merge because of Cubbon Park and the Administrative Complex, which separated them.

In the 1970's land allocated for recreation was 8 percent of the city land. It was the highest among metropolitan cities of India. The rapid industrialization and increase in population had damaged the beauty of the city, with slums proliferating in many areas.
Bangalore registered a record growth during this decade and as a result land prices escalated. Developers bought land and high-rise apartment and commercial buildings started replacing the bungalows. In 1889, open space was four times the built-up area. By 1980 the built-up area was four times the open space area!

The development of Bangalore provided in the Master Plan provides for lung spaces with extensive open spaces in the form of various greens. BMA has retained consonance with the natural features such as ridge, green belts etc. and developed open spaces so as to manage the growing population of this metropolitan city. Out of the total urban areas 13.57 percent has been set apart for green/recreational purposes.

The categories of green in Bangalore are regional Parks, neighborhood parks, city forests, historical landscapes, sports complexes, landmark greens, green belts, tot lots, road side avenues, boulevards, road median greenery etc.

- **Regional Parks and other major Open Spaces** - Race Course, Bangalore Golf Club and Course, High Grounds, Cubbon Park, Dodda Nekkundi Kere, Belandur Tank, Grass Farm, Cultivated Area Open Scrub, Hosakere Halli Tank, Hanumagiri Hill, Lal Bagh & Lalbagh Lake, Palace Grounds, Hebbal Tank, Matti Kere, Bannerghatta National Park etc (see Plate 4.3 & 4.4).

- **Neighborhood Parks** - More than 416 neighborhood parks within the Bangalore Metropolitan Region (see Plate 4.5 & 4.6).
• **City Forests** - Jarkabandi State Forest, Yalahanka Jungle & Plantation, White Field Reserved Forest Mixed Plantation, Konankunte Silver Oak Forest, JP Nagar Reserved Forest (Mixed Trees), Land Army Forest etc (see Plate 4.7 & 4.8).

• **Historical Landscapes** (Heritage Open Spaces) – Chikpete, Lokmanya Thilak Park Thulasi Thota), Gandhi Nagar, Central Jail, *presently Freedom Park*, Raj Bhavan, Musical Dancing Fountain, Vidhan Soudha, High Court, Central College, etc (see Plate 4.9 & 4.10).
- **Institutional Greens** - Gandhi Nagar, Central College, Kumara Park East, Chitrakala Parishat, Shanthala Nagar, Bishop Cotton School, Shanthala Nagar, St. Joseph’s High School, Nagarbhavi, Jnana Bharati Campus, Shankarpuram, National College, Kormangala, St. John’s Medical College, Kormangala, Survey of India Campus, Rajarajeshwari Nagar, RV College, Adugodi, National Diary Research Institute Campus, Kumarswamy Layout, Dayananda College, Jayanagar Vijaya College, Jayanagar, NMMKV Women’s College, Jayanagar, Indira Gandhi Institute of Child Health, Jayanagar NIMHANS Campus, Jayanagar, Kidwai Memorial Inst. of Oncology Campus, Wilson Garden, National Dairy Research Institute Campus, Bannerghatta Road Indian Institute of Management Campus, Kempapura Agrahara, Central Leprosorium, Sadashivnagar, Raman Research Institute, Sadashivnagar Kendriya Vidyalaya, Sadashivnagar Central Power Research Institute, Sadashivnagar, Indian Institute of Science, Sadashivnagar Indian Academy of Science, Sadashivnagar, National T.B. Institute, Malleshwaram, Aranya Bhavan, Malleshwaram, Forest Research Lab, Hebbal, University of Agricultural Sciences, Mattikere Ramaiah College, Vidyaranya Pura, G.K.V.K, Basavangudi, B.M.S. Institutions, Basavangudi, A.P.S (see Plate 4.11 & 4.12).

- **Industrial Zones** - Wilson Garden, MICO, Sriram Puram, Minerva mills, Kempapura Agrahara, Binny Mills, Lingarajapura, ITC, Malleshwaram BHEL, RMV II Stage, BEL.

Many of the public spaces that exist today are a legacy of the colonial period. The streets and bazaars of the city continue to function in a way similar to what it was before
independence. South Parade has transformed into MG Road but continues to be a fashionable shopping and business street. Cubbon Park and Lalbagh Garden are as popular as ever. With the changes in urban structure and demography of the city, have come some changes in recreational activities which have implications for the types of public spaces and their uses in Bangalore. Gandhi Bazaar main road from east to west is a good example where marketing activities are under dense shady trees.

4.3 RECREATIONAL USE OF PUBLIC SPACE IN BANGALORE

Bangalore has many playgrounds and sports fields, some more organized and structured than the others (see Plate 4.13 & 4.14). For example the facility in Madhavan Park has a skating rink, basketball courts, a running track and soccer and cricket grounds, whereas some of the others are just open fields or maidans where several groups are playing different games, mostly cricket and soccer. These look chaotic but each group is following their respective matches and games as if they were the only ones on the field. Several of the schools and colleges, especially those run by the government, allow the general public to play on their fields on holidays and after they close for the day.

While recreational uses have changed over the years, for the most part the traditional public space types of parks, gardens, streets, markets, and maidans continue to serve the needs of Bangalore’s residents. However, the changing demography and people’s lifestyle has resulted in new needs, which are not being fully met by the traditional public spaces, especially in the Central Business District (CBD). At present semi-public spaces such as shopping malls and open-air cafes are catering to these new needs. Also the quality of many public spaces has deteriorated due to over crowding and lack of
management. As a result they no longer cater optimally to the needs of people. Even as land-man ratio is declining, park area–population ratio is declining (see Fig 4.1).

Fig. 4.1 Public and Semipublic Land use in BMA.

Source: C.D.P.1995, B.D.A (Compiled by the Author)
4.4 PUBLIC SPACE TYPES IN BANGALORE

Traditionally parks and lakes have catered to the city’s need to come close to nature, and streets and markets have catered to the need for urban life and interaction with people. Temples, mosques and churches have served religiously oriented people and senior citizens, whereas maidans have been used by youth and children to play. These traditional uses of public spaces continue even today. However these traditional spaces are not fully meeting today’s needs, especially those of the lower income groups, the political and social activists and young professionals and teenagers.

The urban public spaces existing in Bangalore can be broadly categorized into those that cater to people’s needs to be close to nature, such as parks and lakes, and those that cater to people’s urban life needs, such as streets and markets. The following are some of the traditional types of public spaces existing in Bangalore today.

4.4.1 Parks and Gardens

Today Bangalore has many parks and gardens, of these two of the most important parks in Bangalore are Lalbagh Garden and Cubbon Park. Sir Richard Sankey developed Cubbon Park in 1864 (see Image 4.5 & 4.6). Cubbon Park served as a setting for Attara Kacheri (public offices which has been converted into the Karnataka State High Court) and later Vidhan Soudha (Legislative Assembly). Cubbon Park also had a bandstand where the military band played for the public (see Plate 4.15 & 4.16). This tradition started with the celebration marking Queen Victoria’s 60
years of rule and went on till the 1960’s when an orchestra used to perform once a week. According to Maya Jayapal the bandstand in the 1940’s and 1950’s was a place to promenade – to see and be seen (Jayapal, Maya p. 183). Today Cubbon Park occupies about 150 acres of land in the centre of the city and the Attara Kacheri (High Court), the Seshadri Iyer Memorial Hall (Central Library), the State Archaeological Museum and the Karnataka Government Insurance Department is housed there.

It also has a children’s park with an amusement ground in a park setting. Next to this is the complex of buildings housing the City Aquarium, Government Art Museum and the Visveswaraya Science Museum. Throughout the Cubbon Park are groves of shady trees and bamboo, turf, grass, flowering plants, creeks and ponds, promenades, seats and shady nooks for pleasure and rest, meadows, woods and lawns. It is a naturalistic garden and is a huge attraction during holidays. Cubbon Park today caters to peoples’ active and passive recreation needs. The lawns and meadows provide space for families to picnic, the children’s amusement ground has many rides and play equipment, the woods provide space for solitude and contemplation and the many paths are popular among joggers and senior citizens.
Thus Cubbon Park caters to people’s relaxation and engagement needs (as identified by Carr and Lang), cognitive and aesthetic needs (by observing and enjoying nature), and has become a sacred space full of meaning for the citizens who have formed a connection with it over several generations.

Lalbagh Garden covers an area of about 97 hectares. It was built during the reign of Hyder Ali and was originally only 16.2 hectares. The original design was influenced by the Mughal garden at Sira. It once housed a small zoo, which was very popular. A bandstand was built in the mid-1800 where the military band used to play. After independence an orchestra gave performances there till 1976. The bandstand was also the venue for flower shows till the Glass House was built. The Glass House, which has a plan in the shape of a cross, was modeled on the Crystal Palace in England (see Image 4.5). Today horticultural shows are held in the Glass House throughout the year, which attracts many visitors. The Lalbagh Lake (see Image 4.6), which is towards the southern end of the garden, is a popular attraction. It covers 30 hectares and is bordered by Gulmohar trees. The lake is a great habitat for various birds, some migrating all the way from central
Asia. Lalbagh Garden now also has an aquarium. The eastern end of Lalbagh Garden has a small hillock on top of which stands one of the Kempe Gowda towers.

One can get a panoramic view of the city from here. Lalbagh Garden today has become a very important botanical garden and a national landmark, especially the Glass House, the hill with Kempe Gowda’s tower and the Mughal gardens. The rest of Lalbagh Garden is a naturalistic park, which is used in much the same way as Cubbon Park. Like Cubbon Park it caters to people’s relaxation and engagement needs (as identified by Carr and Lang), cognitive and aesthetic needs (by observing and enjoying nature, the horticultural exhibitions and historic sculptures), and has become a national landmark, therefore steeped in symbolic meaning and importance.

Though they are city parks, Cubbon Park is patronized mostly by people from the pete area and the CBD and Lalbagh Garden by residents of the southern suburbs like Basavanagudi and Jayanagar. People in the northern suburbs go to Sankey Tank (see Image 4.7).

Because people scorn public displays of affection, many teenagers and newlyweds like spending time in relative seclusion in these parks. A walk through some of the more isolated spots of these parks reveal couples, who look like they would go into a Bollywood style song sequence any minute. It is interesting to note Venkatarayappa’s observation that students at the time of examination would sit under a tree in Lalbagh to study (Venkatarayappa, K. N. 1957, pp. 92). Lalbagh over the years has also evolved into a place for horticultural research and has a large library. Venkatarayappa also mentions that no visitors left the city without visiting these gardens. He goes so far as to say that it was these gardens that gave Bangalore the name of ‘Garden City’. Correa and Buch claim that it is the Defense lands, which gives Bangalore its garden city image (Correa, C. M and Buch, M. N., 1990, p.54). The defense services (military) own large areas of land in the city, which are underdeveloped. Cariappa Memorial Park is a relatively new garden developed by the army on part of Parade Ground (a military land) in 1996 and named after Field Marshal Cariappa. It is a naturalistic garden with two waterfalls and a few children’s play equipments. The rest of Parade Ground is under-utilized and there is potential to develop this into a central public space.

Bangalore which claims to be a “Garden City” has not added any significant open space during recent years. Even the older spaces like Cubbon Park are being encroached into. The 1995 CDP however had proposed some “regional parks” to be developed. Venkatarayappa in the 1950’s believed that “If Lalbagh were not in existence in Bangalore, life in Bangalore would not have been so pleasurable and so fine as it is today” (Venkatarayapp, K. N. 1957, pp. 93) – this holds true even today. In a way, Bangalore’s parks and gardens cater to people’s relaxation, engagement, cognitive, aesthetic needs and are symbolic of the green city image. These parks will continue to be used as they are and efforts will continue to preserve and enhance their quality. In addition some of the “regional parks” will be developed on the lines of Cubbon Park and Lalbagh Garden and will contribute towards the much needed recreational space in other areas of the city presently not catered to by the large parks and lakes of Bangalore.
a) Parks and its Classification

The parks have also been categorized according to their location into five broad types (BATF, 2003, p. 7): Parks located in (see Fig 4.2) -

- Residential areas
- Mixed land use areas
- Commercial areas
- Industrial areas
- Transportation infrastructure areas (median, traffic islands, roundabouts etc.,)

Parks attached to open spaces surrounding huge public buildings like colleges, offices, factories and hotels etc. are also an important open space which comes under the types of mixed land use areas.

Based on the location of the park, there is an intended usage for the park:

i) Active recreation

- Jogging / walking / cycling
- Sports
- Children’s playgrounds
- Picnics

ii) Passive Recreation

- Leisure time
- Flower shows
- Themes (sculpture park, amphitheatres etc.,)
- Water bodies / fountains

This is a broad classification and more specific themes for individual parks may be developed based on the intended usage.

4.4.2 Tank/Lakes in BMA

The lakes of Bangalore were the main source of water during Kempe Gowda’s time though these were slowly forgotten as modern methods of water supply came to be adopted. They have a pleasant impact on the climate of the city and provide a habitat for flora and fauna. Rapid urbanization has led to deterioration in the quality of the lakes due to increase in the areas that have witnessed topographical disturbance and haphazard disposal of debris. Mainly, rain water flows have become diverted and destroyed.
Maya Jayapal summarizes the plight of these lakes thus,

"The number of lakes has decreased from 262 in the 1960's to 81 in the year 1997. Many of these lakes have been converted into residential layouts, bus stands and stadium. Some have been reduced to slums. Various reasons can be cited – failure to protect the beds, neglect of the embankments, decline in rainfall, encroachment of lake beds for agriculture and construction, garbage dumping and the wild growth of the water hyacinth. All these cause ecological and environmental problems, like the drying up of rivers and streams, and the stopping of movement of seasonal birds" (Jayapal, Maya. 1997, p.194).
Many of the lakes were and still are associated with religious festivals like Karaga and Ganesh Chaturthi. Besides this several lakes have boating facilities and are very popular on holidays. Many lakes have also developed gardens along their banks, which are used by people for relaxation, and active and passive recreation. It is unlikely that more lakes will be developed in Bangalore but intense pressure will continue to be exerted on the city authorities to maintain and improve the lakes that remain. These lakes will continue to be great resources for the city for recreation and along with the parks and gardens will serve people’s urge to be close to nature and maintain Bangalore’s garden city image. Thorough and well planned measures are necessary to prevent the entry of sewage into these water bodies. Out of 81 lakes within the BMA, 60 lakes are listed with their condition in the table (see Appendix 1).

Understanding the urgent need to restore and protect lakes, the Government of Karnataka constituted an Expert Committee vide G.O. No. PWD-82-IMB-85, dated 26.07.85 headed by late Shri. N. Lakshman Rau, to study the problems and suggest remedies for the preservation and restoration of the existing lakes in the metropolitan area of Bangalore City.

Summary of recommendations of the Expert Committee:

- Existing tanks should not be breached but retained as water bodies
- Efforts should be made to ensure that these tanks are not polluted by discharge of effluent and industrial wastes
- Further, to prevent silting up of these tanks, offshore development is to be taken up by large scale tree planting and also removal of encroachments
- Those tanks, which have already been breached, should not be utilized for formation of sites but taken up to create tree parks
- Existing tanks should be deweeded and aquatic life must be developed.
- The tank areas where there is no atchkat are to be handed over to the Forest Department for formation of tree parks / foreshore tree planting and formation of regional parks
- The Bangalore Development Authority/Bangalore City Corporation/ Minor Irrigation Department must remove encroachments on tank areas
• Implementation of the recommendations should be reviewed periodically. For this purpose, the Forest Department, Bangalore Development Authority, Bangalore City Corporation, Minor Irrigation Department, Bangalore Water Supply and Sewerage Board and Town Planning Department may be involved
• The responsibility for the maintenance of water bodies in a clean and safe condition should be with Bangalore Water Supply and Sewerage Board
• The possibility of construction of more tanks along the natural valleys which now have a run-off water should be examined and implementation taken up.

Acting on the recommendation of the Expert Committee, the Government issued an order vide No. PWD-82-IMB-8 dated 11.12.1988 entrusting the responsibility of restoring and protecting 114 lakes to the Forest Department, with the help and support of other Departments/Agencies. The Forest Department brought a unified approach to the challenging and massive task of restoring and protecting the lakes entrusted to them.

They fenced 11 Fresh Water Lakes and planted trees around them under the afforestation programme at a cost of Rs.0.35 million, restored the Vasanthapura and Narasipura lakes at a cost of Rs.0.25 million and with the active support of other departments recovered 32 hectares of land from encroachers. Out of the 81 lakes handed over to the Forest Department during 1992-93, fencing work for 34 lakes was completed during 1993-94 in eight identified lakes: Madivala lake, Puttenahalli lake, Dorekere lake, Vasanthpura lake, Narasipura lake-II, Kundalahalli lake, Chikka lake, Chikka Jala lake and Moggekere lake.

Due to paucity of resources, excusing the major works, the other works, like removal of weeds, upkeep of the lake bund, creation of children’s park and forest nursery, were taken up.

Now the Bangalore City lakes are under the direct supervision and control of the Deputy Conservator of Forests, under whom L.D.A has been constituted for Bangalore Urban Division and Karnataka State.
The Forest Department has already made certain activities for the conservation and development of the lakes. The department has taken steps to constitute lake protection committees for each lake by involving the citizens living around the lakes.

A well-maintained water body, apart from having an effect on the environs, serves as a focal point for creation of recreational facilities and contributes to maintaining the ground water aquifer at a reasonable level. In Bangalore Metropolitan Area which covers Bangalore North and South Taluks, and parts of Hosakote, Nelamangala, Magadi, Anekal and Devanahalli Taluks, several tanks have been breached as a part of the Malaria Eradication Programme in the past. These breached tank beds have been utilized for erection of buildings. Examples of such tanks are Subhashnagar tank bed (existing bus stand), Miller tank bed, Akkithimmanahalli tank bed, Kurubarahalli tank bed, Kidihalli tank bed, Nagashettyhalli tank bed, and Sinivagilu tank bed.

Further, most of the remaining water tanks in the city are polluted by the discharge of sewage water, causing serious damage to the environment. Government had earlier constituted Committees for improvement of Ulsoor tank and Yediyur tank. These two tanks are maintained as water sheets and the surrounding areas developed by BCC and are now available for recreation.

There are other live and disused tanks which are situated within the conurbation boundary proposed to be developed as layouts by BDA and action is to be taken to ensure that the BDA does not proceed with layouts in these generally low lying areas. Rain water harvesting may contribute to augmenting water supplies in the city.

The tanks within conurbation area are categorized as: Disused Tanks and Live Tanks.

**a) Disused Tanks**

There are 46 disused tanks in Bangalore including the tanks already utilized by several agencies. There are 81 live tanks in Bangalore in the conurbation area. In the green belt proper, that is between the conurbation boundary and the metropolitan area boundary, there are 262 tanks. Almost all the live tanks in the green belt have achkat under them and thus cannot be breached. As such they are not proposed for any development. They
should continue as water bodies for obvious reasons. Their water holding capacity has to be improved by repairing and regrading rain water flow paths.

b) Live Tanks

Forest Department has adopted foreshore planting in Sankey tank, Hebbal tank, Arasinakunte tank and a scheme has been drawn up to beautify the tanks and surrounding areas so as to attract bird life etc.

The present trend regarding the tanks in the conurbation area is to breach the tanks and utilize the tank beds for formation of sites or for other building activities. The tanks are getting silted up. There is also contamination due to inflow of sewage water and effluents. In some cases the tanks are even used for disposal of solid wastes thereby destroying rich soil of tank beds and ultimately breaching of tanks is being proposed. On the other hand, these tank beds, if preserved and developed properly, would enhance the environmental qualities and would also serve as recreational places.

It is necessary to preserve the live tanks as water bodies either for irrigational purposes or for recreation and also for maintaining the environs. But, immediate action is necessary to take up foreshore planting there and also to remove and prevent the encroachments. Taking up plantation along the boundary of the water sheet, will prevent further encroachment and siltation. In addition, this tree plantation, if the variety is suitably chosen, can contribute to reducing ground water pollution and detoxification of sewage and chemical contamination.

4.4.3 Temples and Maidans

Temples and maidans were important public spaces in the Indian city. The agrahara pattern of neighborhood planning that was adopted in some parts of Bangalore placed the temple or temple square as its nucleus. Many of these temples had a lake or a garden attached to them. These became important public spaces. The temples even today usually have spaces around the sanctum where devotees can bask, meditate or socialize. This Indian city also had a few maidans interspersed within it. These were open grounds like
‘the commons’ and were used for several purposes. Some of these maidans are still used in the same way. Maidans are usually used by certain age groups – mainly teenagers to play cricket and football or by middle aged or senior citizens for their morning or evening walks. They do not provide play areas for toddlers, which are usually found in neighborhood gardens. Congregations and carnivals are also held in the maidans. The Parade Ground on M. G. Road, though not strictly a maidan, could be grouped in this category. It is an open field of leveled dirt, which is used as a ceremonial space and also as a parade ground by the defense services. This space has great potential to be integrated along with Mahatma Gandhi Garden, Chinnaswamy Stadium and MG Road forming significant green city centers for Bangalore.

The religious spaces sill continues to be important community spaces. They are not truly public spaces but will cater to the human interaction needs of their respective communities (see Image 4.8). Religious spaces will continue to be developed throughout the city. However it is unlikely that traditional maidans will be replicated, although single-use and multi-use recreation facilities will continue to be developed such as cricket grounds, soccer fields, basketball courts, swimming pools and children’s playgrounds. Some of the existing maidans are being converted into neighborhood parks. This trend will continue although some of the maidans will be preserved and will continue to be open spaces for pick-up games. This will result in segregation of incompatible uses such as active recreation of teenagers, from the active recreation of adolescents, and passive recreation of middle aged and senior citizens.
4.4.4 Central Business District/Markets

The older markets of Bangalore continue to be used in the same way as they were a century ago. Small shops are still commonly seen today with neat piles of goods surrounding the proprietor as he sits in the middle haggling with customers. K.R. Market and Russell Market are the two most important markets in Bangalore. Russel Market was built in 1927 on a maidan in what was called Blackpally. The area around Russel market and parts of pete even today have streets specializing in different goods and services like the pete of old. City Market, now called K.R. Market, was built in 1928. During festivals vendors are allowed to display their goods on the sidewalk and the flowers being sold gives the place a festive atmosphere. Most of the suburbs developed in the 1950 have had a city-sub-centre comprising of markets, theatres, schools, recreational and health facilities. This trend continued throughout the 1970’s and 1980’s when several new
suburbs were developed. Many of these public markets continue to be popular places to shop for produce and other goods and are lively public spaces, which cater to people’s human interaction needs, where one can see people haggling with shopkeepers and vendors on push carts.

Many malls have tried to extend the street or link the street to these interior spaces in a superficial way, creating a sort of theme park atmosphere. However in practice these actually present another layer to filter out undesirables, the entry being the first filter between the street and mall, and the atrium being the second filter between the atrium and shops.

4.4.5 Streets

The street is one of the most important kind of public spaces in Bangalore. It is used as a place to do business/trade, to work/manufacture/provide a service, to socialize, and in some cases to live. New uses are introduced on streets and sidewalks, “often temporary sometimes permanent” (Nair, Janaki, 2005). Sidewalks resemble factories like in Tilaknagar where small hand-made goods are manufactured or goods are stored and vehicles parked. The street-side “cobblers, bicycle repairer, key makers depend on fair weather and passing patrons for their livelihood”. Streets are also venues for protests and rallies. The sidewalks have become sites for religious shrines, which over time transform like anthills into large structures. Several of the main streets have developed into major commercial and entertainment areas. B.V.K. Iyengar Road became the retail hub of the Indian city. Like wise M.G. Road, Brigade Road and Commercial Street evolved into important shopping, recreation and office areas. Over the years, the South Parade metamorphosised into M. G. Road, the hub of commercial and entertainment activity in Bangalore. It continues to serve the city as its de-facto centre, a space to stroll in the evenings, to see and be seen.

Bangalore desperately needs an efficient metro rail service to ease traffic on the roads and reduce pollution. The increase in traffic has led to the deterioration in the quality of Bangalore’s streets. The shrinkage of sidewalk space and air pollution makes it difficult for pedestrians to enjoy the street. The streets, especially M. G. Road and Brigade Road
no longer cater to people's need to linger. Over time, the city has tried to convert its small town boulevards and avenues to freeways and major arterial roads. The street as a public space is in real danger of extinction in the city due to this. The rapid urban sprawl that has occurred in Bangalore has resulted in pressure on the CBD's infrastructure and has led to congestion. As the entertainment and social hub of the city, the CBD has suffered as a result, and one can no longer take a leisure stroll along the shop-lined avenues. This trend will continue over the years with increased congestion on the streets, eroding their quality as public spaces. The streets will be reduced to the function of circulation, especially in the CBD area and the old pete area. Their public space function will have to be catered to by new types of public spaces, which will have to be developed adjacent to the streets to decongest them and provide respite for people to relax and linger. In brief, a determined effort is needed to decongest the CBD through some kind of translocation.

4.4.6 Spontaneous Public Spaces

Certain urban spaces acquire new uses and activities in response to the needs of their users, becoming important public spaces. These are spontaneous public spaces. Spontaneous spaces are never really designed but take on a life of their own due to people's contingent needs. This introduces activity into the space, lending it an image and thus converting an anonymous space into a 'place'. Since they are spontaneous in nature they are never lacking in activity. Easy accessibility and a suitable functional mix usually characterize such spaces. In Bangalore spontaneous spaces crop up at nodes (strategic points within a city), near institutional buildings, religious buildings, and around landmarks (see Appendix 2). These spaces accommodate vendors and hawkers, street performers and street theatre. Today one can see many vegetable vendors congregating along main streets of residential areas or at convenient open areas such as Gandhi Bazaar Street in Basavanagudi, 4th Block shopping complex in Jayanagar etc.

Shopping malls, large exclusive department stores, pubs and cyber cafes are some of the large indoor semi-public spaces that have proliferated in the city. Another type of semi-public space that has evolved along M.G. Road and in many other parts of the city is the open-air cafe. The forecourts (and in many cases the compounds) of many buildings have been converted into open-air cafes, Barton Centre and The Bombay Store being two such examples. These spaces, which until recently had no function and were merely superficial
attempts at landscape architecture or plaza design, were converted into cafes as an after thought. Street-side eateries are a response to high rents charged for formal business premises and related expensiveness of their produce and services. Street hawking and roadside eateries embody a drastic minimising in overhead charges and fixed cost. But unlike European cafes these spaces have sharp spatial segregation (by means of level differences or hedges) from the sidewalk, making their exclusivity obvious. Also they are highly controlled spaces, unlike many European street side cafes. The transparent malls and restaurants allow visual access while denying physical access to the lower income masses. These spaces accentuate the division between the haves and have-nots, intimidating the poor and effectively keeping them out of even the sidewalk space. Sidewalk space and streets, which in Bangalore can be said to be the predominant public space in the daily life of its citizens, have maintained a certain extent of democracy (depending on the area in the city).

4.4.7 Urban Green Infrastructure

The “green infrastructure” of a city comprises of natural and designed systems and elements of the city that function in ways analogous to natural processes in managing air, water, microclimatic and energy resources. The most obvious part of this infrastructure are trees, open spaces of vacant lots, lawns and parks, and stream corridors, that is, all places that have water-pervious surfaces and/or soil to support plant material (See Plate 4.17).

The green infrastructure performs ecological, recreational and aesthetic functions in the city. It improves the quality of the urban environment, provides access to natural habitats, enriches subsoil water, immunises against and avoids damage to the built form, and, in general, keeps all of us healthy. Moreover, wise use and expansion of green structure is
cost-efficient at both the individual home/business level and for the municipality (Watson, Donald, 2001, p.7.4-1). The details of the green infrastructure are:

- **Air Quality Improvement**: Vegetation reduces air pollution as it filters dust particles and pollutants attached to them. It also reduces the carbon dioxide content in the atmosphere.

- **Microclimate Modification**: Nonporous urban surfaces absorb and hold heat during warm weather, contributing to the "heat island effect," wherein temperatures can be between 8-10 percent higher than the surrounding countryside (Ibid, p. 7.4-2). Relatively minor green projects can make a significant difference in both pollution control and heat reduction. The green infrastructure of a city is a natural air conditioner. The greater its coverage and canopy, the greater the benefits.

If strategically planted, trees serve as windbreaks, in part by lifting strong seasonal winds up and over the leeward structures and by breaking down strong wind patterns.

- **Storm-water Management**: One of the most important benefits of the green infrastructure is in naturalizing the hydrological cycles in a city. This facilitates rain water absorption into the soil and increase in underground water.

a) **Gardens within the Information Technology Parks**: After 1995, the development of software industries and IT parks in Bangalore, particularly in Whitefield in North
eastern sector and electronic city in southeastern sector, have contributed to a large-scale growth. The software industries are scattered on certain major roads namely, Airport Road, Richmond Road, Residency Road, Sarjapura Road and also within the pockets of Indiranagar and especially in Koramangala layout. Apart from this concentration, even in city areas these Software industries have sprung up (See Plates 4.5 & 4.6). The city has grown in all directions. These industries have contributed substantially to greening of open spaces in their control.

b) Green belt: A green belt covering 682 sq. kms of the LPA, was proposed in the revised CDP all around the conurbation area to improve the climate of Bangalore (CDP (Revised), 1995, p.86). Steps have been taken by all the Departments and Agencies concerned to prevent encroachment of land in the Green Belt. Large scale tree planting, provisional recreational facilities and other public and semi-public uses are proposed in the Green Belt. For example:

- Recreational
- Playgrounds/Stadium/Sports Complex
- Parks and Gardens - Public Open Spaces
- Special Recreation Zone - Restricted Open Spaces
- Multi-Open Space (Maidan)

Internationally, the above land uses usually fall under the category of “open space”.

**4.5 DEFICIENCIES IN THE CURRENT SITUATION**

The fact is that there is no formal procedure for involvement of private sector participants in greening and development of parks. The following explains the main features that are missing.

(a) **Lack of design expertise for traffic islands**: Many companies come forth to sponsor traffic islands and medians with the objective of maximizing exposure to their brands. Unfortunately there is a lack of design expertise for traffic islands. Most traffic islands have been greened and fenced in with beautiful landscaping. However, from the traffic flow and pedestrian safety point of view these are rather deficient. A good example worthy of emulation is the traffic island sponsored by ITC at the Brigade Road / Residency Road junction.
(b) Lack of adequate funding / man power and infrastructure: Although every year certain expenditure is allocated in the BMP’s budget, it is highly insufficient for park development or maintenance. Moreover there is inadequate staff within the department to cater to the growing needs of innumerable parks in the city.

The Bangalore Mahanagara Palike (BMP) along with the Bangalore Agenda Task Force (BATF) envisioned the rejuvenation of the ‘Garden City Image’ of Bangalore, to revitalize the parks, encourage more social activity and enhance the richness of the urban fabric of Bangalore. Despite budgetary constraints and limitations, the BMP has taken on several projects to revitalize Bangalore’s image as a Garden City through the creation of a large park with a bio-diversity theme, a deer park as well as a park with the lotus theme (BATF, 2003, p. 1).

For example, in Tavarakere Park, Bannerghatta Road the thrust is on revival of ‘lotus’ ‘Kere’ (tank) where as many species of lotus are being sourced to be planted along with a focus on the vegetation of Bangalore to be showcased. New techniques of wetland management and rainwater harvesting is to be applied to ensure water conservation and also sustainable maintenance of quality of water bodies (Ibid, p.5). Tavarekere Park an extensively developed aesthetic-looking park is spread over 22 acres of land. True to its name, the park has lotus ponds with a variety of beautiful lotus flowers. Bubbling fountains, cluster of gardens, a food court, centrally located open structure for relaxation are some of the facilities available here, creating an enchanting environment for people of all age groups and all walks of life.

However, the large numbers of parks and the limited budgets have forced the BMP to rethink the strategy of development of parks and the greening of the city. They have approached the BATF for conceptualizing, developing and marketing a project to green the city and develop the numerous parks through Private Public Partnership (PPP).
4.5.1 Need for Greening and Development of Parks with PPP:

a) Lack of funds: Given that infrastructure development, maintenance and other activities gained more priority in budget allocation, the amount of money available for development of parks and for the greening of the city were limited. The horticulture department is strapped of funds and even maintaining the existing parks and green areas is difficult, given the size of Bangalore and the number of parks.

b) Need to rejuvenate and redevelop parks and greening: Budgetary constraints have forced the neglect of many parks, especially the smaller neighborhood parks in residential areas. Therefore there is an urgent need to rejuvenate these parks as neighborhood centers for recreation, in order to provide facilities for citizens. This would also improve living environment for citizens and provide active and passive recreation centers within their neighborhood.

In addition, due to various developmental works, the tree cover in Bangalore is being reduced, and hence the moot idea to plant a tree for every tree cut. Tree planting has also been taken up as a drive under various programs.

c) Current situation of Parks: In recent times, Bangalore has been growing phenomenally with a large number of companies operating here, and the inflow of domestic and foreign investment. This has been an association of mutual benefit – the urban economy of Bangalore has been growing, employment has been generated. On the other hand, this growth has taken its toll on infrastructure, urban growth, traffic and pollution which have been increasing Public sanitation and solid waste are other growing problems.

Except for the larger parks, and some isolated efforts by the BMP, many of the smaller parks are getting neglected. Despite this they still are serving as centers of recreation. However, the need is there to rejuvenate the parks and the green image of Bangalore. Besides the 365 regular parks, there are around 200 open areas and spaces, which are to be developed as parks which are without any kind of infrastructure and are basically Community Amenity sites (CA sites earmarked for development of community infrastructure such as parks etc). Many of these do not even have fencing. Of the existing parks, many have infrastructure like fences, play equipment, street furniture, etc which
are in need of repair and maintenance. Thus the existing parks too, except for a few have not attained their full potential.

Promoting public-private partnerships and participation of citizens, resident welfare associations are also said to be among its objectives. Participatory initiatives of Lion’s Club, Swabhimaṇa and a resident’s group in 4 parks were given recognition. The tendering process of most of the envisaged tree parks and theme parks has been completed and the works are ready to be implemented by next year. The JP Park is a biodiversity park and the third largest public green space in Bangalore, next to only Cubbon Park and Lalbagh.

4.5.2 Temporal Changes: Types and conditions of Parks, Open spaces and Green Areas

The City has a tradition of being a ‘Garden City’ with many green spaces and water bodies. However, the very high growth rate in the past two decades is having an adverse impact on these. Out of the total area of the city, 14 percent accounts for parks such as Lal Bagh, Cubbon Park, Bannerghatta National Park, Dhanvantarivana and 365 small parks, 55 well developed, 105 partially developed, and 180 undeveloped (JNNURM-City Development Plan for Bangalore, 2006, p.22). The lakes/tanks are 3 percent of the total CDP area. As per the RCDP 2005 to 2015, BMA has been divided into three concentric rings containing certain major activities and categories of spaces:

- **First ring:** Political, Administrative, Transport, Business, Trade and Commercial activities.
- **Second ring:** Industrial and Residential categories
- **Third ring:** Areas for development, Reserved and protected spaces

The area of Parks, Open spaces and Green areas with respect to the area and population of the planning districts of Bangalore has been analyzed systematically for all the three rings along with inferences.
i) First Ring

The first ring has an area of 2051.7 hectares with a population of 4,38,260. Parks, Open spaces and Green areas have been analyzed in Table 4.1 with respect to population, area in hectares and the urban fabric.

Table 4.1 Parks and Open spaces in the first ring (Core areas) both in density and area in hectare per 1000 people

<table>
<thead>
<tr>
<th>Urban function</th>
<th>Dist No</th>
<th>Name of Planning district</th>
<th>Popul.aition</th>
<th>Area in ha</th>
<th>Area of Parks &amp; Open spaces in ha (%)</th>
<th>Area of water bodies in ha (%)</th>
<th>Total area of parks and open space in ha</th>
<th>Density pph</th>
<th>Parks &amp; Open spaces per 1000 person in ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic centre</td>
<td>101</td>
<td>Petta</td>
<td>112076</td>
<td>224.5</td>
<td>6.3 (2.8)</td>
<td></td>
<td>6.3</td>
<td>17990</td>
<td>0.06</td>
</tr>
<tr>
<td>Center connected to transport</td>
<td>102</td>
<td>Majestic</td>
<td>32809</td>
<td>141</td>
<td>3.7 (2.6)</td>
<td></td>
<td>3.7</td>
<td>8867</td>
<td>0.11</td>
</tr>
<tr>
<td>Administrative and Political centre</td>
<td>103</td>
<td>Gandhi Nagar</td>
<td>32451</td>
<td>309.6</td>
<td>111.5 (36)</td>
<td></td>
<td>111.5</td>
<td>291</td>
<td>3.44</td>
</tr>
<tr>
<td>Business centre</td>
<td>104</td>
<td>Vasant Nagar</td>
<td>37208</td>
<td>313</td>
<td>29 (9.3)</td>
<td></td>
<td>29</td>
<td>1283</td>
<td>0.78</td>
</tr>
<tr>
<td>Commercial centre</td>
<td>105</td>
<td>Shivajinagar</td>
<td>70069</td>
<td>309</td>
<td>11.3 (3.6)</td>
<td></td>
<td></td>
<td>52.5</td>
<td>1346</td>
</tr>
<tr>
<td>Business centre</td>
<td>106</td>
<td>Richmond Town</td>
<td>36465</td>
<td>365.6</td>
<td>25.1 (6.9)</td>
<td></td>
<td>0.2 (0.1)</td>
<td>1441</td>
<td>0.69</td>
</tr>
<tr>
<td>Commercial centre</td>
<td>107</td>
<td>Chamarajpet</td>
<td>116382</td>
<td>389</td>
<td>6.4 (1.6)</td>
<td></td>
<td></td>
<td>18216</td>
<td>0.05</td>
</tr>
<tr>
<td>TOTAL</td>
<td>14</td>
<td></td>
<td>438260</td>
<td>2051.7</td>
<td>193.3 (9.42)</td>
<td></td>
<td>41.4 (2.0)</td>
<td>234.7</td>
<td>1867</td>
</tr>
</tbody>
</table>

Source: Draft report- Revised Comprehensive Development Plan, 2005-15 (Compiled by author)

The major open spaces such as Cubbon park, Race course and Golf course are located in the administrative and political center, Gandhinagar which is the central historical core of the city and has not changed since colonial period, however the remaining areas of the core have open spaces nearly 0.54 hectare per 1000 persons. The table reveals that except administrative and political centre which is more than 3.44 ha/1000 persons, the remaining areas are deficient as per the UDPFI norm guidelines (1.2-1.4 ha/1000 persons) for parks and open spaces in the core area of the city (see Fig. 4.3).
ii) Second Ring

The second ring (Industrial and residential categories) of development which grew around the core area of the city shows little planned developments with parks, play grounds, stadium and swimming pool provided in these areas. The remaining areas of this ring are disorganized without basic amenities (See Fig. 4.4). The acute shortage of Parks and Open Spaces which are well below the UDPFI Guidelines are shown in the Table 4.2 below.
Table 4.2 Parks and Open Spaces in the second ring both in density and area in hectare per 1000 people

<table>
<thead>
<tr>
<th>Urban function</th>
<th>Dist. No</th>
<th>Name of Planning district</th>
<th>Population</th>
<th>Area in ha</th>
<th>Area of Parks &amp; Open spaces in ha (%)</th>
<th>Area of water bodies (%)</th>
<th>Total area of park &amp; open space in ha</th>
<th>Density pph</th>
<th>Parks &amp; Open spaces per 1000 person in ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential- High Social status</td>
<td>204</td>
<td>Benson Town</td>
<td>81741</td>
<td>370.9</td>
<td>29.5 (8)</td>
<td>0.36</td>
<td>29.5</td>
<td>2771</td>
<td>0.36</td>
</tr>
<tr>
<td>Residential- High Social status</td>
<td>210</td>
<td>Jayanagar</td>
<td>261695</td>
<td>1348</td>
<td>71 (5.3)</td>
<td>6.3</td>
<td>77.3</td>
<td>3385</td>
<td>0.30</td>
</tr>
<tr>
<td>Residential- Middle class</td>
<td>211</td>
<td>Banashankari</td>
<td>460726</td>
<td>1851</td>
<td>72.6 (3.9)</td>
<td>18.2</td>
<td>90.8</td>
<td>5074</td>
<td>0.20</td>
</tr>
<tr>
<td>Residential- Middle class</td>
<td>212</td>
<td>Vijayanagar</td>
<td>228956</td>
<td>1000</td>
<td>72.3 (13.9)</td>
<td>7.2</td>
<td>34.5</td>
<td>6636</td>
<td>0.15</td>
</tr>
<tr>
<td>Residential- Middle class</td>
<td>215</td>
<td>Mathikere</td>
<td>189769</td>
<td>1121</td>
<td>11.9 (1.1)</td>
<td>24.9</td>
<td>46.8</td>
<td>4055</td>
<td>0.25</td>
</tr>
<tr>
<td>Residential- Middle class</td>
<td>217</td>
<td>Kammanahalli</td>
<td>155108</td>
<td>892</td>
<td>15.3 (1.7)</td>
<td>0.4</td>
<td>15.7</td>
<td>9879</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SUB TOTAL</td>
<td>1377995</td>
<td>6582.9</td>
<td>227.6 (3.5)</td>
<td>67</td>
<td>294.6</td>
<td>4678</td>
<td>0.21</td>
</tr>
<tr>
<td>Residential- Working/ Informal economy class</td>
<td>209</td>
<td>Shantinagar</td>
<td>306031</td>
<td>1400</td>
<td>122.2 (8.7)</td>
<td>20.8</td>
<td>143</td>
<td>2140</td>
<td>0.47</td>
</tr>
<tr>
<td>Residential- Working/ Informal economy class</td>
<td>216</td>
<td>Kaval Byrasandra</td>
<td>314493</td>
<td>1097</td>
<td>24.8 (2.3)</td>
<td>20.8</td>
<td>45.6</td>
<td>6897</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SUB TOTAL</td>
<td>620524</td>
<td>2497</td>
<td>147 (5.9)</td>
<td>41.6</td>
<td>188.6</td>
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iii) Third Ring

The third ring which consists of the agricultural land and reserve forest on the east and south along with the protected areas on the west contain vast tracts of land yet to be developed (See Fig.4.5) The regional parks which were proposed in the CDP 1995 are distributed around the fringes of the conurbation area of the city. The ratio of Open area in hectare per 1000 people in this ring ranges from 1-11, which is far above the range prescribed in the UDPFI Guidelines (See Table 4.3)
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<th>Urban function</th>
<th>Dist No</th>
<th>Name of Planning district</th>
<th>Population</th>
<th>Area in ha</th>
<th>Area of Parks &amp; Open spaces in ha (%)</th>
<th>Area of water bodies (%)</th>
<th>Total area of parks and open space in ha</th>
<th>Density pph</th>
<th>Parks &amp; Open spaces per 1000 person in ha</th>
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Fig. 4.5 Parks, Open spaces and Green Areas within Third Ring (Peripheral area)
The table reveals that the reduction in area of parks, open spaces and green areas that may have been encroached upon in and around the first and second ring. The third ring has added a population of 17,96,300 persons and 43.82 sq. km. of parks, open spaces and green areas. As per the UDPFI Guidelines has to be followed the existing urbanized area is slightly lower than the required norms. There are other regulations and initiative for open spaces and green areas:

a) Land earmarked for park and open spaces in CDP, 1995: 77.9 sq. km. (14%);
b) Requirement of BDA – not less than 15 % of the area for parks and open spaces in any newly formed layout;
c) 22 theme parks and 16 tree parks under “Greener Bangalore” are being formed by BMP and BDA;
d) The Forest Department has raised plantations of around 130 sq. km. by planting around 3.5 million plants; and
e) BMP has developed 48% of the 560 parks in the City.

The Green belt and Agricultural land adds up to 42.92 percent of the BMA area. Around 25 lakes/tanks have been developed by initiatives taken by BDA, BMP and Lake Development Authority:

a) Perceiving the imperative need to conserve the lakes in and around Bangalore, Government of Karnataka constituted the “Lake Development Authority” in 2002. LDA so far has developed five lakes in Bangalore using funding from the National Lake Conservation Program fund;
b) BDA has developed three lakes including the Lal Bagh Lake;
c) The Forest Department has also taken initiatives for development of 17 lakes, planned for maintenance of 11 lakes, and developed a Master Plan for five lakes; and
d) BMP has developed four lakes.

Bangalore is gradually regaining its ‘Garden City’ glory since dilapidated and ill-maintained parks are getting rejuvenated in residential localities. As a result, the demand for property and real estate prices around green space and parks has witnessed a gradual rise.