

## **OPEN SPACES – THEN AND NOW. A GEOGRAPHICAL INVESTIGATION OF THE OPEN SPACES IN UDAIPUR CITY.**

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### **ABSTRACT**

As a city grows, its diverse nature of functionality increases and the concentration and distribution of population along with city's spatial physical configuration is also affected. City's spatial physical configurations mean its morphology that includes various planned or unplanned built up areas *i.e.* commercial, industrial and residential buildings, institutions, basic infrastructure and of course the open spaces in terms of amusement parks, public parks and gardens etc. in the city. These open spaces can be private areas or public areas or any other type and they play a very important role in terms of maintaining the ecological health of a city. The provisions and status of these open spaces may prove to be an important tool for assessment of the ecological balance in urban areas. While they are the only empty spaces that can, if developed, serve a city as a green belt combating urban heat island effects produced by various human activities and numerous concrete structures. So, if we think about healthy and sustainable urban living space, we should be equally concerned about these open and green spaces.

The main purpose of the present research work is to analyse the relative positions of the open spaces in Udaipur city with changing spatial physical configuration over time. It has been tried to search out the answers related to the provisions of open spaces in Udaipur city since its evolution to present day urban planning and how much actually required; present status and future prospects of open spaces; scope of development of open spaces as shared responsibility etc. The research methods that have been used or adopted in the process include data collection from various secondary sources like urban planning and development trust, institute of town planning and historical references; temporal analysis on the basis of satellite imageries from some online sources and presentation through suitable mapping techniques.

**Keywords:** Open spaces, Geographical investigation, Udaipur city

## **INTRODUCTION**

In the process of Urbanisation, there have been challenges in different parts of the world and are still there today. The biggest challenge in the developing world is the pace of urbanization. In Europe, the urbanization was 15% in 1800 and due to industrial revolution it increased to 40% in 1910 i.e. a 110 year period while developing countries like Africa and India took just 60 years to achieve this goal starting from 1950 to 2010. Though urbanisation is not necessarily negative phenomena if it is well managed or provided the real time data analysis of push and pull factors which control some urban areas. Many developing countries failed to do so and they are facing challenges related to urban sustainability now. Moreover our urban designing for most of the cities has been limited to the traditional way of allocation of space with little scope of innovative incorporation. It is much more evident in historically illuminated small towns. Ironically some of these cities 'sense of architectural designing and landscaping have been so advanced that they are still able to support the expanded urban area but with cities' continuous growth in whichever direction - horizontal or vertical and large stakeholders it serves but we still have to review our existing over all urban space or better called 'a city' - landscaping with reference to urban ecology and health.

Similar efforts have been made in this research paper and the current study is primarily concerned with the urban open spaces that are an integral part of urban landscaping. As is said by **John Ruskin** that - "*The measure of any great civilization is in its cities and a measure of a city's greatness is to be found in the quality of its public spaces, its parks and squares.*"

## **SIGNIFICANCE OF OPEN SPACES**

In urban land use planning all the parks, green spaces or purposely left unused areas within a city's boundary are concluded as open spaces. From this point of view open spaces are such areas of a city whose provision and management are responsibility of some public authority and they are accessible to the public for various purposes. These open spaces are often termed as green spaces. But it is not necessary. As some of them could be left unused for being barren in nature and thus they lack any kind of greenery. Therefore open space has wider connotation. We can easily define them as unused spaces for any kind of conservational or cultural development and they can be public, semi-public and private in nature. These open spaces when covered with vegetation termed as green space and even without green cover they still are important for the city's ecological balance.

## **SIGNIFICANCE OF THE PRESENT STUDY**

Open space in urban area has many formal-informal benefits like-enhancing physical and psychological health of residents; providing space for social interaction and cultural activities; Preserving natural landscape and urban ecology etc.

In the present research project, we have tried to evaluate their status and role in maintaining urban health and ecology primarily and of course some earlier studies have inspired us to think in this way. Like, A Toronto civic affairs bulletin entitled Urban Open Space: Luxury or Necessity claims that it can be harmful for humans living in more and more human-made surroundings and therefore creating ecological awareness is very important so that they would have been around the nature of their nature as mentioned by Bill McKibben that people truly understand the nature They are immersed within it.

Efforts have been made to analyze open spaces in different ways. Some research showed that the percentage of green space in people's living environment has a positive association with the perceived general health of residents. Green space seems to be more than just a luxury and consequently the development of green space should be allocated a more central position in spatial planning policy. These types of studies were largely conducted for European countries post industrial revolution.

In the 1860s/1870s US landscape architect, Frederick Law Olmsted was convinced that visual contact with nature was beneficial to the emotional and physiological health of city dwellers (*ibid.*). Olmsted's theories regarding the healthful, restorative effects of nature in the urban environment were a major influence on the City Beautiful movement and had a widespread effect on the design of parks and urban landscaping (*ibid.*) (Health, Well-Being and Open Space

## **LITERATURE REVIEW**

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In developing countries also researchers have made significant attempts to analyze open spaces in association with their in urban environmental health, urban spatial structure, urban spatial planning and its multidimensional impact on the residents. So, there have been plenty of works carried out in various streams *i.e.* - Environmental science, urban morphology and architecture, medical geography, biology etc. and they have been successful to put milestones on the pathway of urban sustainability.

After knowing the importance of open and green spaces for any cultural surroundings, it is natural to have a question about their comparative position around us. Therefore, the primary question of current research is to analyze the comparative position of open spaces in the context

of Udaipur city. Ultimately, it will be helpful in knowing the status of the urban ecological health of Udaipur and it will be able to determine the direction of expected efforts.

### **OBJECTIVES OF THE PRESENT STUDY**

The major objectives that have been framed under the research process are-

1. To analyse the comparative position of open spaces in various land use planning.(1971-2011)
2. To analyse the present status of the open space in the city with varied dimensions.
3. To provide suggestions about open and green spaces based upon the conclusions of the study.

### **METHODOLOGY**

Various research methods have been applied in the research process viz. data collection regarding open spaces from secondary sources like published literature of various land use planning; city's urbanisation; acts and rules for built up structures; data regarding demographic trend etc. A primary survey was also conducted based on random sampling and backed with satellite imageries analysis. Various analyses were presented through graphs and thematic maps.

### **ABOUT THE STUDY AREA: THEN AND NOW**

**Evolution and extension** -The city of Udaipur was founded by Maharana Udai Singh more than four hundred years ago in 1559A.D. As stated in various historical archives that the Maharana wanted to ensure greater protection for the people and a better war strategy. So he thought of the site- a basin rimmed with lofty Aravallies presenting a natural barrier for the intruders through not only the loftiness of the hills but the deep dense forests along with them. After the fall of Chittor (the former capital of Mewar), Udaipur served as the state capital of Mewar from 1568-1948AD.

**City planning and structure**- Basically political, religious and sense of security were the factors which used to determine the urban development during the medieval period. Therefore, places presenting natural barriers for the intruders were given priority. The palace of king used to be built on a comparative high elevation and it was considered as the centre of the city planning and development.

All these features of Medieval Cities are also evident in Udaipur city. It was planned according to the medieval urban planning standards and hence the planning was more inclined towards safety norms rather than the provisional layout.

The whole city was extended over an area of 4.85 Sq. Miles, out of which 4 Sq. Miles has been covered by the lake Pichhola and Fateh Sagar and the rest of the area was used for habitation, gardens and other institutional purposes. It is worth mentioning that the walled city had very limited scope for differential urban landscaping and its internal morphology was very compressed with narrow roads and residential building all around it. Therefore various open and green spaces were developed along and outside the city boundary to control mental uneasiness, suffocation and pollution etc. caused by such compact morphology and increasing human activities within the walled city. For nearly 400 years from its evolution the city transformed according to its rulers while after independence, local self governing bodies became responsible for the next 20 years (1950-70) and from the 1970s to present day various policies and their regulations are being controlled by the state government itself.

**DEMOGRAPHIC PATTERN:** As it is clear from the table the growth of population in Udaipur city increased rapidly from 1921 to 1951. The rapid growth right after the independence was caused by the in migration of refugees in the city. After the year 1951, the population of 1971 was very significant in terms of population growth and 45% increase during this period. From 1991 to 2011, there are signs of rapid growth in the rapidly growing population, because in just four years or half a decade, the population is growing at double the rate compared to the pre-decade.

Year	Population	Growth (%)	Density per Sq Kms	Year	Population	Growth (%)	Density per Sq Kms
1901	45,976	-	-	1971	161,278	45.11	27
1911	33,229	-27.73	-	1981	232,588	44.24	36.28
1921	34,789	4.67	-	1991	308,571	32.66	48
1931	44,035	26.58	-	2001	389,317	26.16	60.57
1941	59,648	35.46	34.74	2011	451,736	15.99	70.14
1951	89,621	50.25	50.7	2021	650707*	-	-
1961	1,11,139	24.01	30.9	2031	841122*	-	-

\*Estimated population as per 2.6% growth rate.

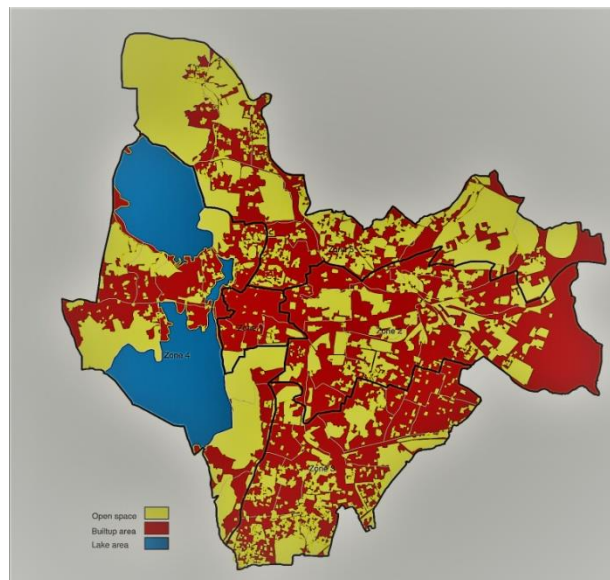
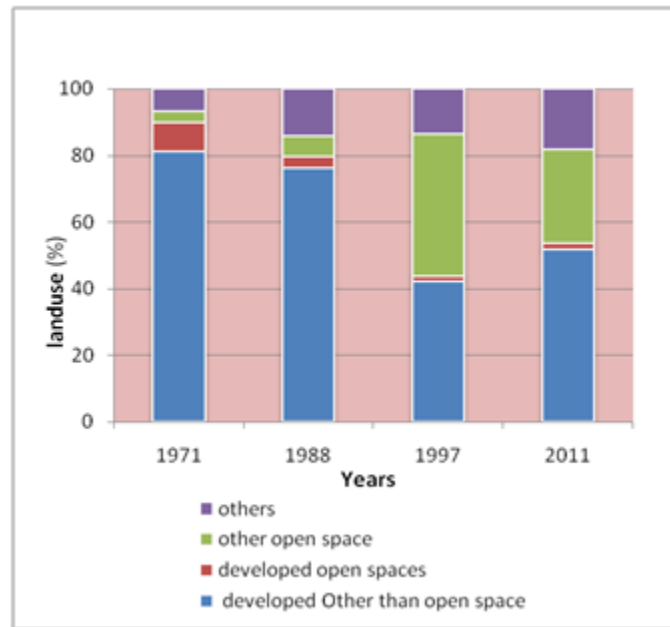
As far as the distribution pattern of population is concerned, the core of the city is the most densely populated area of the city till now while the population in the outer periphery of the city is inhabited in scattered form. Udaipur city is currently divided into 55 wards out of which the ward number 37 is the densest populated ward while number 25 is the least populated ward.

**TEMPORAL ANALYSIS OF LANDUSE AND RELATIVE OPEN SPACES (1971-2011) -**

The relative position of open areas in the city can be understood through the analysis of land use data for different years of Udaipur city. Comparative analysis of the data claims that in the year 1971 about 8.4 percent land was present in the form of open area, out of which 3.5% was in the form of other open areas like water bodies, barren land etc. It is to be noted that the phase of 1964-1970 has been very important in the process of urbanization of Udaipur city as various industries were established during this period and it led to the growth of built-up area in the city.

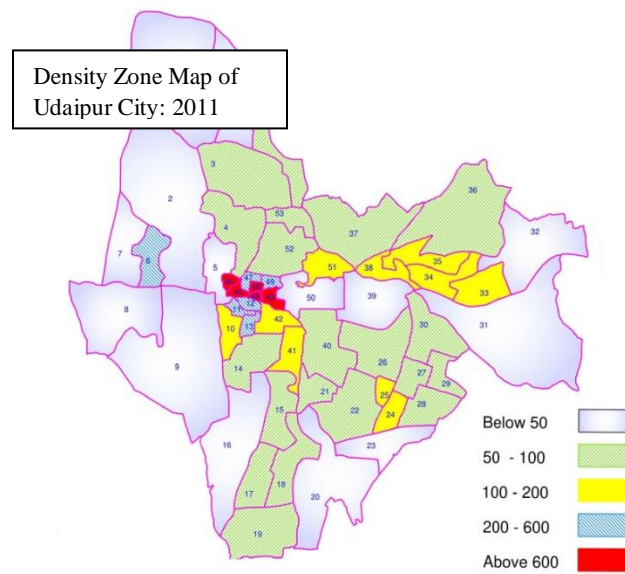
However, because of the indifferent attitude of the state government in relation to the planning and urbanization of Udaipur town, the urban development authority had to face the lack of finance in the beginning. The situation improved by the 70s and new built up areas developed in many places by breaking the city wall. In the meantime open areas like- Nehru children's' Park, Nehru Park, Guru Govind Singh Park, Pratap Memorial, Aravali Vatika, Patel Circle, Sukhadia Circle and Dehlegate-Surajpole Gate etc were also developed. All these open areas still play an important role in maintaining the city' ecological health. As is evident by the chart, the share of developed open spaces has declined over the years while share of other open spaces has increased relatively that includes water bodies, barren land, playgrounds etc and they tend to be increase with city's horizontal expansion.

<b>Landuse</b>	<b>1971</b>	<b>1988</b>	<b>1997</b>	<b>2011</b>
developed Other than open space	3495	6472	9521	13929
developed open spaces	365	302	358	534
<b>total developed land</b>	<b>3860</b>	<b>6774</b>	<b>9879</b>	<b>14463</b>
other open space	150	531	9672	7560
others	290	1190	3050	4902
<b>Total</b>	<b>4300</b>	<b>8495</b>	<b>22601</b>	<b>26925</b>



Apart from the share of developed open spaces in total land use their per capita availability also shows similar trend. Like per capita available open space for the year 1971 was 0.22 Acres and it has declined to 0.11 acres in 2011. While increase in the total city' land use was six times that of the area in the 1971. It is evident from the facts that the territorial growth of the city wasn't in tune with its required open space.

**REVEALATION FROM FIELD STUDY:** Apart from analysing absolute increase in the city area and the relative open space over time, it was tried to analyse the available open spaces on the basis of density zones in the Udaipur city based on the census 2011.

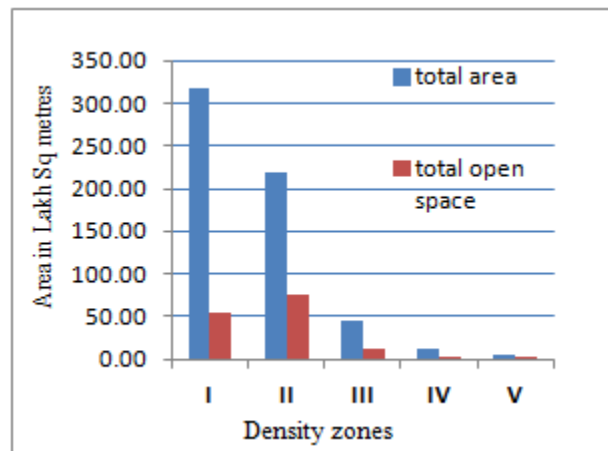


The density zones pattern compliments the spatial growth of the city. The zone with the highest density includes most of the old walled city area with minimal open space available within the “Parkota” while zone-II having the second lowest density consist maximum open spaces with 35% of the total area.

The average open space available for the city accounts up to 24.51% of the total city area and 126.18 Sq metres per person. It’s unfortunate that we lack the exact statistics about the share of green spaces in the open areas and it gets more complicated when it comes to calculate the residential open and green space.

The World Health Organization (WHO) has suggested that every city should have a minimum of 9 square metres of green space per person. Considering this the city will need to have approximately 57.99Square metres as green space which will be 95% of the total city area and that’s something beyond our capacity now. Though, the city had maintained this standard back in 1970s.





**KEY FINDINGS OF THE RESEARCH:** The points which have emerged in current research are as follows:

- Udaipur city is growing rapidly with the view of the horizontal expansion. Its municipal area is growing at a rate of about seven square kilometres per decade whereas in the developed open area of the city the accretion is at 0.17 km, which is very less.
- Moreover, we have been observing the importance of open areas in the context of city ecology with the inhabitants of the city. Thus, the growth in the urban open area cannot be termed as satisfactory compared to the urban population increasing at the rate of 2.6% per decade.
- There is a lack of vision and provision for open spaces in urban planning under a defined objective.
- In addition to the city planning department, U.I.T., Municipal Corporation and Forest Department have a lack of adjustment and coordination, despite having a shared responsibility. This makes it difficult to track the exact status of open spaces.
- Residential open spaces also have its own importance in the ecological balance of the city and it's environ. This is the closest available area for residents whose justifiable usage will prove to be very positive for residents. Although the UIT and the municipal corporation have arrangements for residential construction rules in their own jurisdiction, but in reality the deficiencies in the regulation of construction have been found.

**SUGGESTIONS:**

1. We need to start with a proper estimation of the required open space for the city' ecological health with a scientific approach.

2. We should make a long term vision about city's structural organisation for a planned usage of the available space.
3. Major stakeholders should be identified and their role and source of financial assistance should be well defined.
4. Reducing the administrative complexity related to urban ecology should make it easy to ensure participation of the common man.
5. It is important for urban ecology-health that responsibilities are fixed at all levels and it is possible only when we have a fair division of works from research to policy formation and execution.
6. In today's technological advances, we need to adopt some innovative methods using technologies, which can predict an average position whether it is about the effect of our activities on the environment or the impact of our environment on our lives. Such efforts have been made to measure the ecological footprint globally at the individual level.
7. Last but not the least, it is important for us to digitally maintain and record the data status of indicators related to different aspects of urban ecology, which will help us to take important decisions.

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