

ENVIRONMENTAL IMPACT ASSESSMENT OF POPULATION DENSITY IN THE GARDEN AREA KARACHI (PRE-PARTITION TO POST-PARTITION PERIOD)

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Abstract: The proposed project is concerned with population density from pre-partition to post-partition period in Garden Area Karachi. The immense load of population and its activities has created multiple problems with serious social and environmental concerns in the area. Once Garden Quarters were most beautiful and planned area of Karachi, now its worst affected area, densely populated, with severe and serious environmental impacts in terms of construction planning and development, environmental degradation such as; air, noise pollutions, inadequate system of solid waste management. In addition to, that the development of the defective high-rise buildings construction system. The construction, which was ideal and architecturally, horizontal in its nature, converting rapidly into vertical shape without any serious planning. Further, it has damaged the basic infrastructure, which existed since the united government of India, during British era. This gigantic infrastructural mutation has severely created environmental problems of Air, water, and noise pollution, which resultantly produced congestion, suffocation, and noise, in the area. Thus, this demographic change has gigantic effects, which seems visible on almost every aspect of life. Therefore, it is need of hour to reassess the volume of construction with regard to the environmental implications, demographic impacts and the aesthetic beauty of Garden area from pre-partition to post-partition period. Physical surveys conducted in the area, to obtain the complete profile of the Garden quarters. Investigation provided the information of acute problems which have direct impacts on social, economic, cultural, and environmental stagnancy of the area. Garden Quarters being part of the financial hub of the district south of Karachi needs great attention to recover to its previous situation to sustain the environment in general.

Key words: Environment, Assessment, Population, Impact, Pollution, Horizontal.

1.1 Introduction

In 1843, the city of Karachi captured through a brief battle at the Karachi port the then rulers of Sindh surrendered before the English army. Finally the city was come in direct control of British Forces. Soon after that the English soldiers felt necessity of fresh supplies vegetables and fruits and they grow at this barren land of modern Garden Quarters.

1.2 Growing Vegetables / Fruits for English Army at Garden.

Soon after the British territorial occupation, the English army felt indispensable, the swift, smooth, timely, and fresh supply of vegetables and fruits

for forces. Finally, decided to allot 44.5 acres land to cultivate the vegetables and fruits, on this uneven, rough, roughed, and terrain land that is known as today's modern Zoological Garden and Garden Quarters. The area provided best fruits and agricultural products for many years to English army.

1.3 Establishment of Recreational / Playgrounds in Garden.

In 1858, the English administrators converted this agricultural land into recreational grounds. Soon after decision, large playgrounds such as; cricket, football, and huge park for public use was created, and efficiently managed by the administration. In 1872, English army transferred

this garden to local civil administration for its maintenance, within two years in 1874 the playgrounds were returned to military cantonment for its maintenance and the civil administration refused to maintain the playgrounds because of the lack of financial resources.

1.4 Turning playgrounds into Zoological Garden in 1874.

Finally, cantonment officers made a strategy to turn the playgrounds into zoological Garden. By applying this policy imported many animals, plants, flowers and willows from various countries. By this way a beautiful Garden was established, and it proved much fruitful such as; it provided lush green greenery, beautiful flowers, fruits, and animals of various species on one hand sightseeing for leisure time activity for the people of the city on the other hand.

1.5 Development of Garden Quarters (A Residential Compound).

Historically, the establishment of Garden Quarters about eighty years old since now; it came into existence by 1933. The then administration felt need to have quality housing therefore, planned many housing projects, one of them is Garden Quarters. The total land allotted for the Garden Quarters, was about sixteen hundred acres, by converting into kilometers, it is about six square kilometers in area.

1.6 The extension of Bombay Town Planning Act of 1915.

The British Government of India extended the Bombay Act of Town Planning 1915 to establish Karachi Municipal Corporation in 1930. By this act, city was divided in many union councils and wards for general electorate, and the development of elected bodies. By 1933, The Garden Quarters were also established. This code enunciated future building code for housing and town planning at Karachi.

1.7 The Enunciation of Housing Code of 1915 at Karachi.

The housing code devised for the future housing plan implemented in the city. According to this code Western Row Housing plan (Gridiron Plan) applied for zoning of the city and its wards,

according to need for the future extension of the city. As it was already in use in western countries and same pattern was applied in Bengal too.

1.8 Generation of Extensive Economic Activities in the City.

As time passed on, Karachi city increased in its size in its all four corners, such as from east to west and north to south, due to increasing its financial activities. The fundamental reasons of growing activities in terms of financial activities were as under.

- I. Karachi Port Operation.
- ii. Development of Railway.
- iii. Export of Cotton from Multan and Bahawalpur.
- iv. Trade Links with Central Asia.

1.9 Direct Impacts of These Financial Activities on Karachi City.

- I Increase in Population in Karachi.
- ii. Growing Demand for Housing and office spaces.
- iii. Economic Wellbeing in Karachi.

1.10. Housing Typology Implemented in Garden Quarters.

Under the devised mechanism of the Bombay Town Planning Act of 1915, the development of Garden was patronized on the horizontal development. The reason behind horizontal development was based availability huge area and vast spaces to the city. Secondly, they implemented same building hierarchy here in subcontinent, because they inherited it!

2.1 Research Objectives

• Population Density Impacts.

The immense load of population and its activities has created multiple problems with serious social and environmental concerns in the area.

• Pre - Partition Environmental Conditions.

Once Garden Quarters were most beautiful, planned and lush green area of Karachi now it has been worst affected area

• Post-Partition Environmental Conditions.

Post-partition conditions are worst affected area, which is densely populated, with severe / serious environmental impacts in terms of construction planning and development.

3.1 Study Area.

The Garden Quarters were established by an Act of 1933, issued by the British Government of India, due to need of housing in the city. The Total area of the Garden was near about six square kilometers, with estimated population about 1, 22,572. Currently, the area comprises on two UC – 2 Saddar Town and UC -11 Jamshed Town, under the administration of City District Government of Karachi. Fig 1.a (a) UC – 11 Jamshed Town Figure: 3. 1.(b) UC – 2 Saddar Town, figure 2 shows consolidated map of Topo map and spot satellite image Figure: 3.2 Garden Area Karachi.

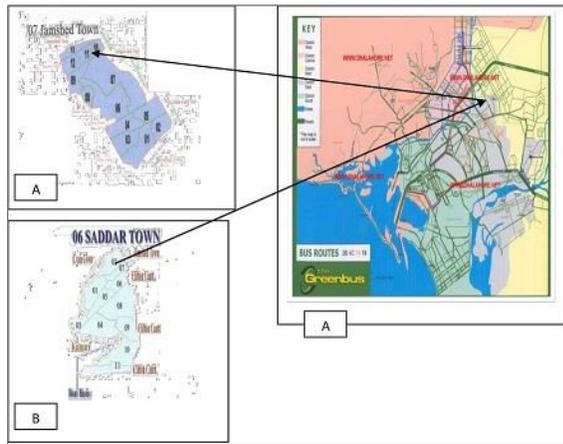


Fig No: 1 (a) UC – 11 Jamshed Town Fig No: 1. (b) UC 2 Saddar Town. Fig No: 2 shows consolidated map.

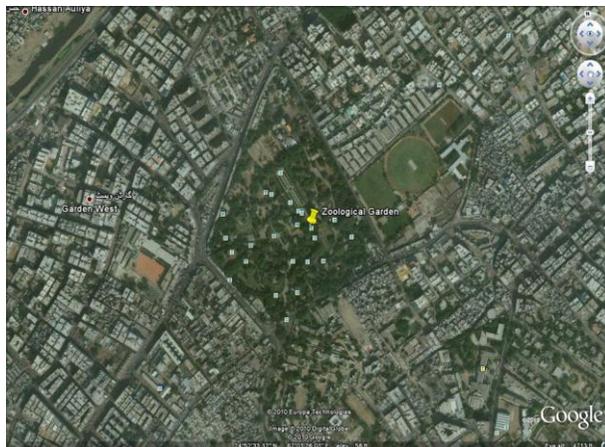


Fig No: 3, Topo map of Garden Residential Quarters and Zoological Garden.

4.1: Development of Garden Quarters (1933 – 1947).

Before the post-partition period specially, The Garden was a residential compound and a choice

location for the elite classes to live. With a heterogeneous combination of various communities, primarily the affluent classes of various communities, such as.

4.2 Pre- Partition Ethnic Composition Profile

1. Christians, 17.00%.
2. Bohras, 14.00%.
3. Parsis, 21.00%.
4. Hindus 27.00%.
5. Muslims. 13.00%.
6. Others 8.00%.

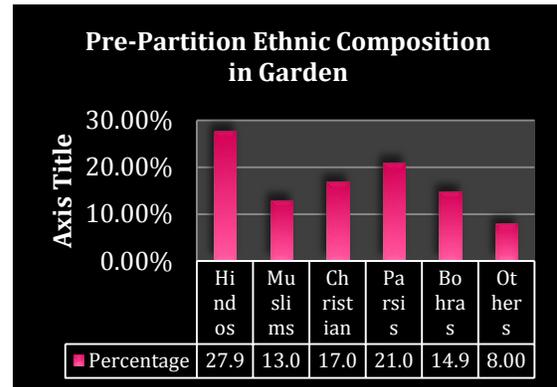


Fig No: 4, Data Chart, showing pre-partition ethnic composition of the Garden Quarters.

4.3 Inter- communal Harmony

The inter-community relations were warm and cordial and society at general was loosely integrated. No major ethnic divide, religious riots, and political fragility in the Garden Area was observed.

4.4 Post- Partition Ethnic Composition Profile (1947 – 1998).

1. Christians, 4.00%.
2. Bohras, 5.50%.
3. Parsis, 4.00%.
4. Hindus 3.00%.
5. Muslims. 82.50%.
6. Others 1.00%.

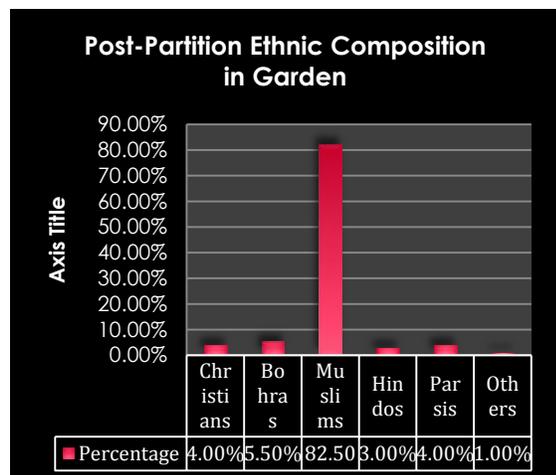


Fig No: 5, Data Chart post - partition ethnic composition of the Garden Quarters.

4.5 Landscape.

Landscaping scenario and greenery was astonishing, while entering the in the residential locality, with lush green bougainville's that drapes boundary walls of the large houses limning the main roads, and all houses were pleasantly accosted with the scent of Jasmine and in the evenings, raat ki rani, Chamblee's, Roses etc. in the area.

4.6 Transportation and Communication.

Quaint horse carriages, reminiscent of 19th century London, which were a common mode of transportation, are still seen trotting down less busy roads. Majority of them are seen parked along the main Soldier Bazaar buildings. Currently, the mode of transportation has been rapidly changed from past pattern to modern vehicular auto traffic.

4.7 Post-partition Political Instability.

However, with the political instability in the early eighties, the rise of dissident political parties, and rapid urbanization, things began to change. Though Government has prohibited high rise buildings in the area; however, profit seeking builders who bought out empty mansions met with little or no opposition, due to political and ethnic harassment, whereas, these builders, built the unauthorized buildings in the area.

4.8 Post-partition Migration of Ethnic Minorities.

The impact was so grave and threatening in nature, that, all those people who lived here from pre-partition period felt threat and finally, began to sell their homes in a search of quieter lifestyle, one with less noise, unrest and pollution.

Another reason for their departure was that, most residents have had business and jobs in different parts of the city, and must endure many hours traffic jam just to get home. Specially, Parsis, Ismailis, and Bohras, emigrated from Pakistan towards the western countries such as; USA, Canada, and Europe. Hindu already left city during the partition period. While the remaining affluent class settled in DHA (Defense Housing Authority) in Karachi.

4.9 Changing Horizontal Construction to Vertical Construction Garden Area.

About five years back today the City District Government removed the prohibition against the high-rise construction in the area, which further expedited the process of old residents moving out from the area. This concept of moving forward to healthier environment rather than considering themselves to be a part of an integrated Karachi remained dejectedly is the common ethos of Karachi.

4.10 Commercialization in Garden Area.

The area rapidly commercialized, small shops such as; garages, hardware stores, and tiny convenience stores began to mushroom in once a quiet locality. Unattractive buildings stand wall to wall around Nishtar Park, where once only colonial mansions could be seen.

4.11 Environmental Pollution in Garden Area.

The area remains unkempt, while clouds of smog hanging over narrow roads meant for much smaller population. Buggies been replaced with noisy rickshaws. The roars of the zoo loins at dawn have been grown rare and faint. Today, Garden is an over-populated and a concrete jungle.

4.12 Population Boom in Garden Area.

With the city's expansion, it has become a part of city center. It is now registered as part of Jamshed Town, Karachi's largest and most populated

district, with 13 sub-districts, of which Garden is one. The population density has grown significantly, because of the high-rise apartments have brought an influx of new settlers. The mood of the area today is a far cry from the posh, quiet and tasteful residential one of the late sixties.

The city has variable density before the partition of United India. It has been noticed that the population figure of Karachi has been given by the City District Government is biased in nature. The argument in support is given on the basis of Census Report of Government of India, whereas; City District Government preferred to count people living in the Karachi city’s urban area. Karachi has been presented as an ancient walled city state of Greece. The view is biased and unjustified, based on irrationality of ethnic thinking and philosophy.

5.1 Results and Conclusions

5.2 Continuous Increase of Population Density in the Area.

The un-sustained increase in population density begun in post-partition period, proved the causes of persistent increasing in the population density with multiple effects. Some of them are social in nature, such as; the enormous influx of migrants who came to Pakistan, were to have accommodate with housing to live. Thus all large plots were given to various housing societies to constructs with vertical style of construction, as to accommodate the migrants. This created the mesh of land grabbers / land mafia, and neglected by the administration. The area of Garden stays allied to the business center of city that further enhanced the high density.

5.3: Environmental Impact Assessment of Population Density.

Compiled data of causes of population density and its Impacts on different variables; the data collected for Environmental impact assessment.

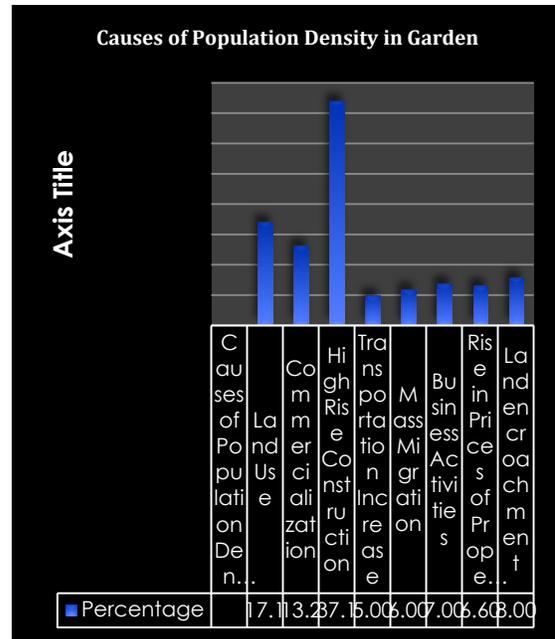


Fig No: 6, Data Chart of causes of the population density in the Garden Quarters.

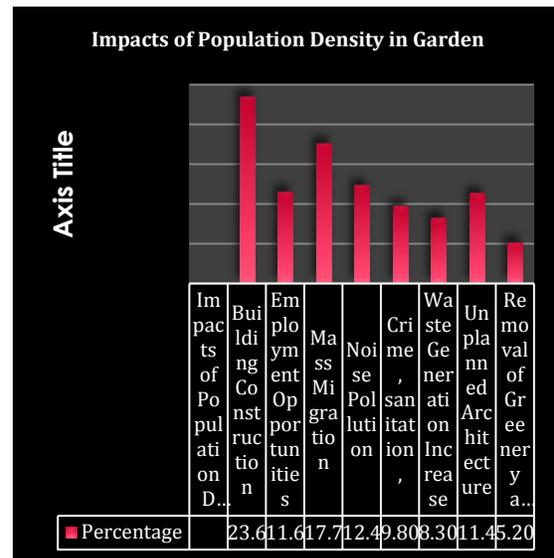


Fig No: 7, Data Chart of the impact of population density in the Garden Quarter.

5.4 Major Findings of Population Density in Garden Quarters

1. Changing of Horizontal Construction into vertical construction.
2. Change in the Building Typology.
3. Continuous Increase in the Population Density in the Area.

5.5: Changing Horizontal Construction into Vertical Construction Pre-partition Construction in the Garden Quarters.

The pre-partition Garden Area was ideal to live, due to the general environment stood healthful, and having serene and calm social attitude. The Garden Quarters remained lush green, architecturally planned, with wide roads, and in a systematic order. The area flourished with multicultural environment and festivities, all around year; it was due to multi-ethnic composition on one hand, and the area has an outstanding and old zoological garden that added it beauty and provided great pleasure to the population. Thus area was ideal and attracted wealthy class to get accommodated in the area.

For the future construction in Karachi and whole subcontinent English masters adapted the same code. The building code implemented earlier was an extension of subcontinent architectural design. British colonial era was horizontal in nature, due to certain reasons, and was inherited them from Europe, almost in entire Europe, before world war II, the same gridiron pattern was in practice, with gothic architectural designs. Secondly; nature endowed Karachi with red stone in abundance to be used in future architectural construction. Thirdly, the city has less population as compared to huge land availability. Therefore, the colonial construction was based on huge plots, with wide and spacious bungalows during the British time.

5.6 Advantages of Horizontal Construction.

1. It plays vital role in keeping serenity in an area, the housing units being separate with wide streets, there is no tension, noise pollution, and traffic problems.
2. It enhances the aesthetic beautification of the area, as streets are too large to be dense and overcrowded as happens in south Asian cities like Karachi, Mumbai, Calcutta, and Dhaka etc.
3. It manages large boundaries of municipalities in a city, with large parking area, increased and proper pedestrian paths, including tracks for cyclists to minimize the use of common public and private transportations.
4. Large tracks provide extra facilities for morning walkers to walk and remain healthy for the citizens.

5.7 Disadvantages of Horizontal Construction.

1. The horizontal construction utilizes huge belts of land it doesn't suits specially, land deficient cities and towns.
2. The general argument is given in this regard, that horizontal construction is increases transportation to reach at their job sites, in terms of traffic, distance, and occupancy of land in general.
3. The horizontal construction has been difficult to manage other municipal facilities like sewerage system, telephone service, electricity provisions, and natural gas for people.
4. Today's world where rampant criminal activities occur frequently has multiplied the problems for security agencies and policing the area in general.

5.8 Post-partition Construction in the Garden Quarters.

The reason for conversion of horizontal construction to vertical construction in Garden area was due to multiple factors, and one of these factors, was colossal increase in population pressure. Consequently, population pressure directly impacted to convert the horizontal construction into vertical construction in the Garden Area. (See results in Physicals field survey in aerial photography).

Including this certain other factors were also involved in population density, such as Pakistan emerged as a separate state, and it was relatively, a weaker state in terms of administrative control. The authority of power was exercised by a dominant ethnic beurocracy of single segment of the society, who neglected the strict measures against their people in general (See results in Physicals field survey in aerial photography).

Violators encouraged accommodating same ethnic group in all those areas which were previously inhabited by other weaker ethnic groups, especially, Hindus, Bohras, Parsis, Christians, and others by intimidation of all kinds. For that reasons all huge land belts were captured, and converted into vertical construction and its ongoing process still it is continue in the area.

5.9 Advantages of Vertical Construction

1. The vertical construction plays a major role in to accommodate the maximum population in land deficient cities like, Hong Kong, Singapore, Taiwan, and Japan etc.
2. The vertical construction reduces the use of public or private transportation between home and office, people generally, avoid having a transport to reach at shop, market, office and an area of their interest.
3. The vertical construction reduces the cost of construction, land utility in today's costly world.
4. The vertical construction beautifies the cities with skyscraping building, in the meantime; it reduces the sense of security among the people.
5. The vertical construction no-doubt increases high-densities in cities, at the same time high-densities are beneficial for cities to, as cities do not remain deficient in skilled people.
6. The vertically constructed high-rise buildings provide maximum housing facilities to all type of families to accommodate them. As two, three and four bedrooms remain available to occupy according the requirement of a family.

5.10 Disadvantages of Vertical Construction

1. The common argument against the vertical construction is given, it increases densities in the localities, towns, and cities become over-crowded result in various types' pollutions and environmental degradation is common.
2. The comfortable living style being provided by horizontal construction is not comparable in any way with vertical, its kingly life style with wide rooms, verandah, car - porches, and gardens, which plays important role in the landscape architecture of the cities in general, therefore, vertical construction is highly questionable.
3. The vertical construction creates problems for recreations at home; people feel difficult to arrange social events at their homes, ultimately, they higher the open spaces like

marriage halls, hotels, restaurants, to treat their guests.

4. The vertical construction proved to be common suffocations at ground levels, due to high densities and traffic problems, in the vicinity of ground.
5. Vertical construction has multiple dislikes in case of old age, diseased / sick, such as; orthopedic patients with joints pain, cardiac patients, with coronary vascular diseases, patients with hypertension, asthma, general weakness, people with obesity and higher weights, have common dislikes for elevated buildings.

5.11 Conclusion.

The most important of all findings, the violation of zone planning is common in whole Garden area. Once the area was most beautiful and aesthetic in nature, now it has been shabby place to live. Pre-partition period of Garden area specially, West Garden was much more beautiful, health living, with huge bungalows, abundant lush greenery, now has been turned into high-rise buildings from 5 to 7 story buildings, trees has been chop off, broken roads, congested streets, with poor air quality, because of fog over the roads, and common suffocation and dirt and filth clad streets, encroachment everywhere in the already narrow streets.

This all has been possible due to certain local irregularities, malpractices, rampant corruption, weaker system of administrative control, poor governance. This fiasco has created builder mafia, who instigate owners of the plots more than the actual worth of the plot, and construct the illegal buildings, with no environmental standards, like safety and security of people in case of emergency such as; earthquake, and fire etc. generally, Garden Quarters had been witnessed that, the early construction plan was kept by British masters, who made strategy of planning, was based on the horizontal construction, in the same western housing typology. Therefore, allocated bigger sizing plots to develop the bungalows, once common in the area. The common size of plots was about 400 square yards, now the same plot is divided into 120 square yards and being constructed a multi-story building. Resultantly, congested construction has turned the area into high density.

5.11. A Change in the Building Typology.

In 1843, Sindh was captured by the English army, before this the local construction was not suitable to be continued. The home were isolated and mud made, with badgers (Ventilators), soil made bricks were used in the construction, English officials same code of construction implemented, as in Bengal and back to England. The houses were made of stone and red bricks, wide living rooms, verandahs, servant quarters, roofs were made up to 15 feet high due to high temperatures in subcontinent, and lawns were given, with horse couch porches. The code which was implemented colonial masters was judicious, fine, and much smarter for healthy living and environment friendly. Unfortunately, the code of horizontal construction was replaced with vertical construction due to increased population pressure, which has created environmental stress in the area.

5.11. B Environmental Pollution Problem.

Since unregulated / uncontrolled building construction got boost has multiplied various types of environmental pollutions in the Garden Quarters. Most acute situation exists in the area. The major types of pollutions are air pollution, noise pollution, and water pollution. The prime source of pollution is vehicular emissions due to traffic congestion in working hours. The garden Quarters being the part financial hub of the Karachi, it generates the economic activities of the highest level in the city. The business centers, wholesale markets, banks, public and private offices located mainly in the area. It's quite normal the ratio of diseases greater than the other areas of the city. Smoky streets and roads, creates major hurdles for the patients of asthma, hypertension, flu, sore throat, and mental stress due to highest level smoke and noise are the day today affair of the Garden Quarters.

5.11. C Political Factor.

Politically, Pakistan inherited a weaker administrative control since its inception. The strength which was required to meet the routine rules and regulations, were not exercised or neglected in general. Corruption played a pivotal role and hampered the path of justice for powerful and paved path for weaker segments of the society, to bring before the law.

5.11. D Religious Factor.

Religious factor was essential in transforming the population density in Garden Area. The major population section in pre-partition to post-partition period in Garden predominantly, was Non-Muslim; they were deliberately forced to migrate from the area on the religious ground. Example: Hindus in pre-partition period.

5.11. E. Economic Factor.

Economy plays important factor in accumulation of population in an area. The garden area being adjacent to city's financial hub played prime factor in population density in Garden Area. It is quite clear that economy boosts the businesses; ultimately, business circles being flourish in the vicinities of the city.

5.11. F Ethnic Factor.

Unfortunately, since the creation of Pakistan, it has been facing the major stratification in its social fabric in the society. Pakistani nation has not been integrated into one nation; we have been divided into multiple factors. Unity has been a dream to become true in our lives.



Fig No: 8, Construction planning in the Garden Quarters.

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