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Environmental Sustainability in Gated Communities

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Abstract: *Gated communities are residential areas with restricted access in which normally public spaces privatized. They are security developments with designated perimeters, usually walls or fences, and controlled entrances that are intended to prevent penetration by non-residents. They include new developments and older areas retrofitted with gates and fences, and they are found from the inner cities to the exurbs and from the richest neighborhood to the poorest. Many gated communities are being developed all over the world for providing housing facilities which often presents a unsustainable trends of security oriented urbanism. This project is an attempt to plan and design the layout according to building by laws and regulations of the governing authorities. In this project, we consider area which is located at Rajendra nagar to plan and design a layout, we designed the existing layout as a gated community by providing all facilities such as Drainage design, Overhead tank, Providing of Amenities such as open space, playschool for children, swimming pool, commercial facilities, play ground ,water Harvesting and a water treatment plant.*

Keywords: *Gated residential communities, water harvesting, water treatment, swimming pool*

I. INTRODUCTION

A gated community is a housing development on private roads closed to General traffic by a gate across the primary access. The developments may be surrounded by fences, walls or other natural barriers that further limit public access. There has been a considerable growth of interest in recent years surrounding the emergence of gated communities, fortified enclaves and other forms of privatized public space. This interest has been found in the work of sociologists and anthropologists who have focused on the residents of these developments as well as urban and regional theorists who have linked the emergence of gated residential developments (GRDs) to wider processes of economic and urban restructuring that have been associated with globalization. Gated communities are residential areas with restricted access in which normally public spaces. These new residential areas occur in both new suburban developments and older inner-city areas for the purposes of security and segregation. The developers of gated communities brilliantly market their projects as safer, friendlier, and more economically stable traditional urban or even suburban neighborhoods. Gated communities formed in early years of the nineteenth century were mostly for old and Retired people, important members of the community and handicapped persons. Some gated communities, usually called guard-gated communities, are staffed by private security guards and are often high-value properties, or set up as retirement villages. Some gated communities are secured enough to resemble fortresses.. The gating of a residential area is not a new phenomenon. During the middle Ages and the Renaissance, kings and other royalty provided gated enclaves for their families and loyal followers during times of siege and pestilence. Fortified with towers, moats, and drawbridges, they stood as formidable reminders of class distinctions (Dillon, 1994). Since the real estate boom in the late 1980's, this rapidly growing phenomenon of gating off communities has become more prevalent in today's society. In its modern form, a gated community is a form of residential community or housing estate containing strictly-controlled entrances for pedestrians, bicycles, and automobiles, and often characterized by a closed perimeter walls and fences. Gated communities usually consist of small residential streets and include various shared amenities. For smaller communities this may be only a park or other common areas whereas for larger communities, it may be possible for residents to stay within the community for most day-to-day activities. Currently, there is national policy on enclosed neighborhoods or road closures for security purposes in India. Legislation either overtly or covertly to provide for gated communities, road closures or neighborhood enclosures, or security estates. The real estate is easily accessible from the neighborhood and there is security procedure in place to restrict movement in and out of the real estate. This study examined the impact of gated communities on residential property values to establish whether property values are higher within gated communities than their neighborhoods and the impact on gated communities.

A. *Effects Of Gated Community*

The rise of gated communities can lead to spatial fragmentation and separation in cities as a result of its security and financial implications. Gated communities give a sense of community, safety, security and social exclusion which lead to urban fragmentation and separation.

A number of leading authors on gated communities highlight the potential gated communities contribute the fragmentation in urban areas. It is well known that in big cities, the current concern about security and maintenance of social order express through social and spatial segregation process. The fast spread gated communities affect both the lives of the people who live in the urban sprawl. Gated communities do not only threaten, but also contribute to the city through creation of new job opportunities, secured areas, better infrastructure and utilizing inactive lands. However, the secured areas are an advantage only for the inhabitants of the gated communities. Davis (1998) sees gated communities as manifestations of the militarization of urban space and conclusively of the class struggle space. As such, while in the past the housing market forced the poor into the more or less closed ghettos in the cities.

B. *The Impacts And Implications Of Gated Communities*

While safety and security are not only the reasons, they constitute the main factors behind proliferation of road closures and road closures and security villages. Consequently, the first question is always whether such responses to reduce crime. There are mixed opinions about this. A study by Blakeley and Snyder in the USA found that some security zones reported a reduction in crime after the streets have been closed.

In another study, comparing two gated and two non-gated (2000) found no significant differences in the perception of safety between the gated and non gated communities in both the high income and the low-income communities Others are however more skeptical about the effects on crime. According to Naud (2003) gated communities do not always reduce crime. Rather very few crimes are reduced by the closure of existing suburbs and public roads. In addition, large number of occasional visitors must be allowed into area for example family and friends of homeowners, gardeners and domestic workers, municipal workers, building a construction workers, repair and garden services, delivery services, people looking for work with the result that there is still a high crime risk in that area.

Naud (2003) warns that crime statistics collected by members of public in support of the closure of the suburb are often not reliable and even be misleading. What seems to be undisputable, however, is that in a living security village or enclosed neighborhood reduces the fear of crime inside the protected area.

C. *Challenges Faced In Gated Communities and Its Solutions*

Gated communities are residential buildings or neighbourhoods with ****controlled entrances**** for residents and guests. While they provide peace of mind and security, they can also face some challenges. Here are common problems in gated communities and potential solutions:

1) *Amenity Booking*

- a) Amenities (such as pools, gyms, and community rooms) are attractive features of gated communities.
- b) In larger communities, managing amenity bookings can be challenging for staff.
- c) Solution: Implement a system like VALET's Building Operating System It provides residents with a mobile app to book amenities, and staff can manage requests and scheduling through a web-based portal.

2) *Concierge Services*

- a) Concierge services enhance security and offer personalized experiences for residents and guests.
- b) However, they can be expensive, especially in larger communities.
- c) Solution: Consider cost-effective concierge services or explore technology-based alternatives to provide personalized assistance

3) *Cost and Maintenance*

- a) Gated houses are often more expensive than standalone buildings.
- b) Maintenance charges are higher due to shared amenities and security features.
- c) Solution: Educate residents about the benefits of gated living and ensure transparency in maintenance costs.

In summary, while gated communities offer safety and controlled access, addressing these challenges requires thoughtful planning, technology adoption, and community engagement

II. LITERATURE SURVEY

1) According to Ajibola M. O, Oloke O. C, Ogungbemi, A. (2010)

There has been a considerable growth of interest in recent years surrounding the emergence of gated communities. This study examined the impact of gated communities on residential property values. While questionnaire was administered on the 230 residents of Omnieties estate, 40 copies were administered on the estate surveying and valuation firms managing properties within Omnieties estate and Idi-Mangoro neighborhood. A total of 134 (58.26 questionnaires were retrieved from the residents and managing agents respectively). In analyzing the data collected for this study, descriptive statistics were adopted. The study revealed that residential properties within Onipetesi estate are more expensive than that of Idi-Mangoro. The study revealed that quest for security life and property is a major factor attracting to the estate. In terms of economic sustainability, gated communities provide good basis of improving the standard and quality of valuation of residential property, however both environmental and social sustainability should be given equal recognition, especially with the various criticism levelled against gated communities in terms of sustainability contribution to urban growth.

2) According to Elena Vesselynov (2007)

In this article we analyzed gated communities as a nexus of social and spatial relations within the context of urban inequality. We apply tickamyers (2000) sociological framework for incorporating space into the study of inequality, which allows us to substantiate the arguments that the process of gating increases urban inequality. The contributions of this article are three: Generating new systematic theoretical approach toward study of gated communities We argue that gated communities reproduce the existing levels of social stratification. We introduce the term gating machine, where the combination of the interests and actions of local government, real estate developers, the media, and the consumers suggests prevailing conditions assure the future proliferation of gated communities

3) According to PRANSHUL SAHU, RITESH KAMBLE (2017)

In the presence of electronic age, the development of the country, heavy loads of the vehicles are also rapidly increasing. As we know that the prime factor influencing structural design of a pavement is the load carrying capacity requires. In this project, we are studying about the design of the flexible pavement as the California bearing ratio design procedure. This procedure requires that each layer be thick enough to distribute the stresses induced by traffic so that when they reach the underlying layer. Flexible layers consist of following layers :

- a) Asphalt layer
- b) Base layer
- c) Sub base layer
- d) Sub grade layer

4) According to Akshit lamba, L. P. Srivastava (2017)

Liquid storage tanks whether it be underground or overhead or on the surface are commonly used in industries for storing chemicals, petroleum petroleum products etc. and for storing water for public in water distribution systems. Importance of maintaining safety norms, such tasks against seismic loads cannot be neglected and taken lightly. Indian seismic code IS:1893:1984 showed very little provisions on seismic design of both elevated and underground tanks. Compared to present, those provisions of IS 1893: 1984 are highly inadequate. Moreover the code failed to cover ground supported tanks. In 2002, the revised part 1 of IS 1893 was established in the market of bureau of Indian Standards (BIS) in order to maintain safety issues for these tanks. The present study will deal with study will deal with the whole design analysis and parametric study of structural analysis of circular and rectangular water tank to avoid stress and cracking. After modal analysis seismic loading of tank will be done using ANSYS work considering both thermal and structural analysis of tank.

No person or corporate body of government or private corporate shall carry out any land development or re development or carry out layout or sub-divide or utilise the land or any portion of the same on the site or sites for building purpose, alterations in any layout or cause to be done without obtaining approval from Executive / Competent authority for the Land / LAYOUT development plan.

The owner of any land shall before he / she utilises, sells, lease, or otherwise dispose of such land or any portion thereof., as sites for construction of any type of building or taking up any development activity, shall obtain the land / layout development permission from the Executive / Competent Authority.

In case where development has already been started / commenced on site for which development Competent in writing of the competent authority is not obtained. The developments on the site is at accordance to the provisions of these rules, on submission of the application as prescribed the development permission for such work on site may be granted by the Competent authority on the merits of each individual case. For such. Development works, over and above such other charges / fees may be otherwise levied, the additional amount twice the stipulated rates shall be charged.

A. *Application For Permission*

Every person or corporate body of government or private corporate intending for land / layout development shall apply in writing and or through online system to the concerned executive authority of such intention in the prescribed form.

The Executive authority before approval shall get prior technical approval of the Competent Authority.

The layouts prepared by the revenue department for distribution of pattas to the weaker section shall be in accordance with these rules. In case of weaker sections housing programmes guidelines issued by the state government should invariably be followed and the executive authority shall approve such layouts.

B. *Plans And Documents To Be Submitted*

The applicants shall submit the plans and documents as stated below. All the plans shall be submitted in hard copy (as many as number of copies prescribed) and also soft copy in auto-cad format with geo- coordinates

Location plan: location plan drawn at a scale of not less than 1:2000 shall be submitted along with notice showing the boundary location with respect of neighbourhood land marks. Site plan: A site plan should be drawn to scale not less than 1:500 for areas upto 1 hectare and not less than 1:1000 for areas more than 1 hectare and It shall show all physical details of the land, boundaries of the land, the surrounding existing layouts / lands and existing approach road to the land where the layout is proposed.

C. *Service Plot And Water Supply Provisions*

For recharging ground water, rain-water Harvesting provisions are to be provided within the layout / plot, which are to be indicated on the plans with the detailed description and also indicating plan including cross- sections of rain water structures.

D. *Minimum Size Of Plots*

- 1) *Residential Plots:* The minimum size of plots shall be 100 square. m which is getting access from 12 m wide road and the frontage (Width facing the road) of the plot shall be not less than 8m.
- 2) *Commercial Plots:* The minimum plot shall be 150sq.m and frontage of plot shall not be less than 10m.
- 3) *Industrial Plots:* The minimum plot area shall be 300sq.m and the frontage of plot shall be not less than 15m.

III.METHODOLOGY

The present proposal is an approach for comparing and deriving the differences in gated community and non-gated community. And conclusion based on the results at the end of study. The main aim of this report is to determine the various parameters of gated community. In this the various techniques are adopted for analysing the parameters and quality off gated community. Collection of data from different methods and calculation of tables are followed or performed to make an analysis of the gated community.

A. *Social Practices And Viewpiont*

A Methodological Framework Two scales of analysis can be identified when studying urban segregation. At a city scale we can study the socio-spatial features of different groups and their distribution in the urban space describing patterns and inferring processes.

At a micro scale we can social group and the individual preferences, attitudes and behaviour of its members. The processes that give rise to patterns at both scales are interrelated. The study of segregation at the macro scale is often concerned with structural effects, another way, the effects of constraints on individual behaviour. Income is the principal constraint on an individual's freedom to locate but there are others such as race, religion, degree of education and other personal attributes. These effects, particularly income, socio-spatial groups that are not formed by choice. Micro-scale segregation studies often focus more on choice, looking at the separation of one social group (for example, gated community residents) from other social groups (those living in the surrounding areas) on the basis of particular interests, needs and values.

B. Data Collection

The Fig. shows the methodology for this study. This methodology chart explains the first step, about the general information of gated community planning. This includes the components of gated community, definition and its services. The next step is the study of gated community planning and design for various case studies. Then the detail study is made for each aspect through different live case studies. Finally, the concept for the design is involved and progressed towards the development of design.

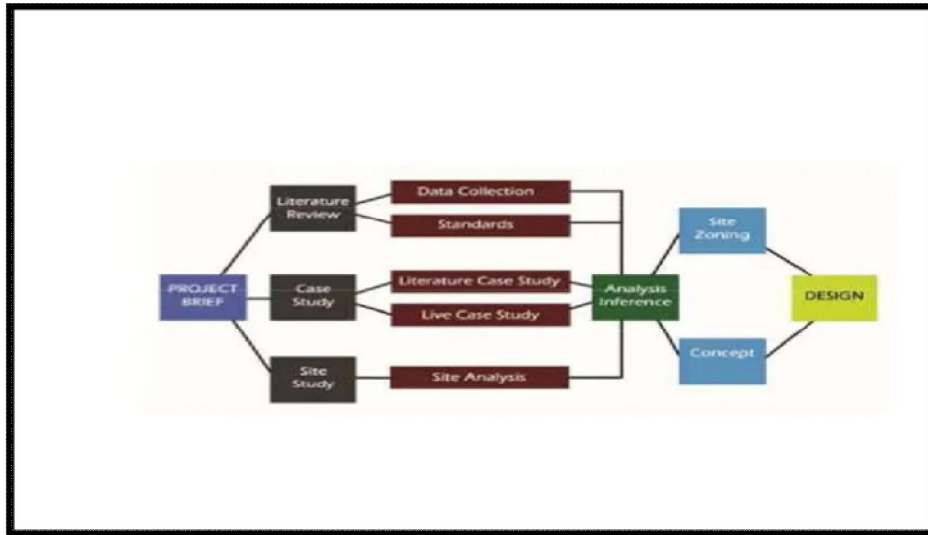


Fig 1. Flow chart of data collection

C. Selection Criteria

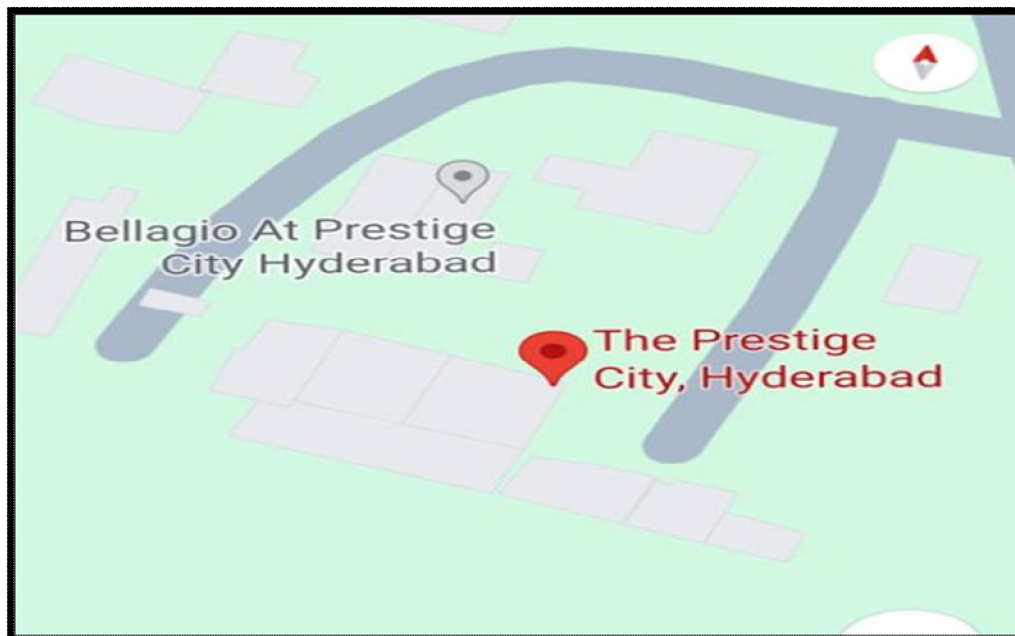


Fig 2. Location of “The prestige city” at Rajendra nagar, Hyderabad.

Rajendra Nagar and its surrounding areas are referred to as "Hyderabad" by the media due to recent industrial development around this area. It is a Satellite town developed by CMDA in the Year 1980. Many heavy industries are located in Rajendra Nagar. The Ford India and BMW car factories are located within a mile of Himayat Nagar and the Forest and archaeological department has an office within eight kilometers of Rajendra Nagar. CMDA has developed both residential and industrial layouts in about 5.40 acres.

IV. CONCLUSION

In conclusion, gated community villas provide a luxurious and secure living environment for residents seeking exclusivity, privacy, and enhanced amenities. These developments often feature meticulously designed homes with upscale finishes, lush landscaping, and state-of-the-art security systems, offering a retreat from the hustle and bustle of urban life.

Additionally, gated community villas foster a sense of community through shared recreational facilities, such as swimming pools, tennis courts, and clubhouses, where residents can socialize and engage in leisure activities. However, while these communities offer a high standard of living, they also face criticism for exacerbating socioeconomic segregation and limiting access to public spaces.

Ultimately, the decision to reside in a gated community villa depends on individual preferences, priorities, and values. For some, the allure of prestige, security, and amenities may outweigh concerns about social integration and inclusivity. However, for others, the desire for a more inclusive and interconnected community may lead them to seek alternative housing options.

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