

Formulation of Development Control Regulations for Dimapur Planning Area

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Abstract

Development controls have been defined as the mechanism through which the entire process of urban development is regulated to achieve the objective of promoting the overall benefit of society and creating a distinct image of the city. It includes guiding the development and use of land, curbing misuse of land, and promoting rational and orderly development of the built environment. Dimapur district being the commercial center of Nagaland is the most populous city. It acts as a transit hub for trading goods brought in from trains at Dimapur railway station and by road via National Highway 29 to other parts of Nagaland and neighboring states as well. The city also has the only airport in the State. Many private and central banks are also located in the city. Taking all these factors into account, Dimapur needs a holistic formulation of development control regulations for planning. As such, this thesis will look into the area of project applications for the city, processing entitlements, and ensure that future decisions about development are aligned with the city's land use policies and proposed land use regulations. According to the data collected and the analysis which will be done after the data collection, outputs like analysis of the prior and current scenarios of outgrowth development, patterns problems & potentials of the study area, and planning for the future land use and zoning regulations of the study area will be proposed. It will look into promoting urban design principles and managing the city's historic resources. From overseeing the long-range planning efforts to managing the environmental review of projects, the study will work with local communities to enhance and preserve the built environment for future generations. This study will make an effort in building consensus and setting a clear citywide vision.

Keywords: Development Control Regulations, Zoning regulations, Urban Planning

I. INTRODUCTION

Dimapur, a rapidly growing city in Nagaland, is in need of a well-defined Development Control Regulations (DCR) to regulate the use of land and construction of buildings in the planning area. The DCR should be formulated with a view to achieving sustainable and inclusive growth that balances the needs of the economy, environment, and society. The DCR should aim to address the city's development needs while ensuring that the natural environment is protected, heritage sites and buildings are conserved, and adequate infrastructure is provided. The formulation of the DCR should involve all stakeholders, including the planning authority, developers, and citizens, to ensure that the regulations are based on a comprehensive understanding of the city's existing and future development needs. This paper

will provide an overview of the key objectives that should be addressed while formulating the DCR for the Dimapur planning area. However, urban planning and DCR formulation in general can provide valuable insights for the formulation of DCR for Dimapur. The formulation of DCR should be based on a comprehensive understanding of the city's existing and future development needs. The DCR should be aligned with the city's master plan and provide a regulatory framework for achieving the master plan's objectives. The DCR should also be formulated with the involvement of all stakeholders, including the planning authority, developers, and citizens, to ensure that the regulations are based on a comprehensive understanding of the city's development needs.

The importance of zoning regulations in DCR formulation. Zoning regulations help to regulate the use of land and prevent incompatible land uses from coming up in close proximity. The study also highlights the need for building regulations that prescribe the height, setback, and other design elements of buildings, as well as the permissible floor area ratio and ground coverage in different zones. These regulations can ensure that the buildings are compatible with the surrounding environment and do not cause any adverse impacts. The importance of environmental regulations in DCR formulation. Environmental regulations can ensure the protection of the natural environment, such as water bodies, forests, and wildlife habitats. The waste management guidelines and the use of renewable energy sources should be included in the environmental regulations.

Heritage conservation is another important aspect of DCR formulation. The need for guidelines that recognize and protect heritage buildings and sites in the planning area. The guidelines should specify the requirements for conservation and restoration of such buildings and sites. The DCR should define the institutional mechanism for implementing the regulations. The institutional mechanism should specify the roles and responsibilities of the various stakeholders, such as the planning authority, developers, and citizens. This emphasizes the importance of zoning regulations, building regulations, environmental regulations, heritage conservation, and the institutional mechanism for effective implementation of the DCR. These insights can guide the formulation of DCR for Dimapur Planning area.

II. OBJECTIVES

The formulation of Development Control Regulations (DCR) for the Dimapur Planning area should aim to achieve the following objectives:

- a. Zoning: The DCR should define the various land-use zones in the planning area, such as residential, commercial, industrial, and recreational zones. This will help in regulating the use of land and prevent incompatible land uses from coming up in close proximity.
- b. Building Regulations: The DCR should prescribe the building regulations that govern the height, setback, and other design elements of buildings. It should also define the permissible floor area ratio (FAR) and ground coverage in different zones.
- c. Environmental Regulations: The DCR should prescribe the environmental regulations that ensure the protection of the natural environment, such as water bodies, forests, and wildlife habitats. It should also define the guidelines for waste management and the use of renewable energy sources.
- d. Heritage Conservation: The DCR should recognize and protect the heritage buildings and sites in the planning area. It should define the guidelines for the conservation and restoration of such buildings and sites.

- e. Parking and Transportation: The DCR should define the parking requirements for different types of land uses and provide for the development of pedestrian-friendly infrastructure. It should also promote the use of public transportation and non-motorized modes of transport.
- f. Implementation Mechanism: The DCR should define the institutional mechanism for implementing the regulations. It should specify the roles and responsibilities of the various stakeholders, such as the planning authority, developers, and citizens.
- g. By addressing these key objectives, the DCR for the Dimapur Planning area can ensure that the development in the city is sustainable, inclusive, and aligned with the needs of the city's natural environment, heritage sites, and residents.

III. LITERATURE REVIEW

The study provides an example of how to choose appropriate sites for urban development in the study region using a geographic information system (GIS) and the multicriteria evaluation (MCE) technique. ArcGIS software was used to create a number of themed layers utilising Google Earth and Toposheet. The final site suitability map was created by integrating layers of the soil, geology, geomorphology, groundwater, rail network, road network, and land use/land cover, then performing a weighted overlay analysis suggested by Rajiah, Murugasan et.al.(2018)[1]. Basumatary, MijingGwra et.al.(2018) suggested the main goal in this paper is to evaluate if essential urban infrastructure facilities required for a sustainable smart city are there. Using the questionnaire method, a stratified random sampling of homes was taken in each of the research area's 31 wards[2]. Unplanned urban expansion has changed the land use and land cover (LULC), particularly in emerging nations. Due to minimal or nonexistent planning efforts and rapid urban population increase, many Indian cities are experiencing issues with unexpected LULC transformation suggested by Paweet.al.(2018)[3]. Due to its primary demand in all planning activities, information on land use/land cover and changes through time has gained relevance in the current context of development planning (NRSA, 2006). Land cover influences biodiversity, evaporation, soil erosion, and surface runoff because it facilitates interactions between the biotic and abiotic elements of an ecosystem. The land cover has undergone a significant shift as a result of urbanization, which is characterised by an impervious surface area (ISA) typical land use type and engineering buildings. The dynamics of global environmental deterioration are governed by urbanisation processes, which emphasise the need for a sustainable environment suggested by Borthakur, Monjit, and Bhriku Kr Nath (2012)[4]. Building byelaws are the rules that are typically created by government planning organizations, either at the local or national level, with the goal of regulating urban development in harmony with that which is anticipated in the Master Plan and for the purpose of ensuring structural safety, public health, and hygiene. They basically offer guidelines on how structures should be planned and constructed, which a citizen or developer planning to establish a building on an urban plot of land can employ. In addition, they outline the steps that must be taken for submitting an application, the supporting documents and drawings that must be attached, the undertakings that must be made, the certification process, and the inspection/monitoring mechanism. They are frequently supplemented by the city's master/development plan, which specifies zoning regulations, permitted land use suggested by Mishra and AnjayKumar(2019)[5]. Only 75 years have passed since the United States' first zoning code was passed, and 65 years have passed since the Supreme Court acknowledged such laws. Zoning has expanded quickly in this short time, both in terms of the number of towns using it and the goals and authority it serves. The most noticeable zoning restriction, in addition to governing

structures and parcel use, is that over minimum lot sizes. It is generally agreed upon that requiring a minimum lot size (thereby reducing density) serves two reasons. The first benefit is that it gives nearby property owners (and the wider public) access to a "greener," more open landscape, which many people consider to be a valid public good. Second, it increases the likelihood that new construction will cost enough to provide adequate (or surplus) tax income compared to the price of delivering public services suggested by Wheaton, William C(1993)[6]. Planning land usage for livable human communities. According to numerous studies (EEA, WHO, RTP, NICE, 2009), the spatial design of human urban activity has an impact on people's quality of life, health, and well-being. Before describing the evidence in regard to a wide range of themes, the study provides a brief introduction to the issue and a framework for study. It focuses in particular on the critical connection between geographical factors and inequality, physical exercise, and mental health. Presented by Barton and Hugh(2009)[7]. Environmental management is the process of regulating or directing human-environment interactions in order to safeguard and improve both environmental quality and human health and wellbeing. The following four interactions have the potential to impact both human welfare and the environment: 1. The environment puts the human society at risk from certain natural hazards. 2. Environmental pollution caused by society has an effect on human health. 3. Natural resources are being overused by society at unsustainable rates. 4. Ecosystems and productive natural systems are harmed by pollution and over use suggested by Randolph and John(2004)[8]. Historic neighborhoods with a rich cultural past are frequently torn down and replaced by contemporary high-rise structures in cities that are undergoing significant economic growth. Despite a rapidly growing economy and rapid urban expansion, urban conservation policies are used to preserve historic districts. According to a survey conducted in conservation areas, the program has been largely successful in maintaining the old shophouses with historical significance. An examination of how shophouses are used reveals that the policy has also been successful in preserving the activities that characterise neighborhood life in Chinatown, Kampong Glam, and Little India. This is so that market forces may work, which enables the preservation and repair of the historic shophouses feasible suggested by Lee and Sim Loo(1996)[9]. planning for cities in a market economy. Landowners, developers, investors, politicians, and regular citizens are among the individuals it is concerned with since they interact with one another and respond to development pressure to form the built environment. People like them make sure that most towns and cities gradually develop through a continual process of change and development, whether or not urban planning is present. Urban planning seeks to influence this process rather than completely override or control it. In fact, urban planning is best described as a type of state intervention in a development process that is mostly driven by the private sector. It is an explicit program for the management of land-use and environmental change suggested by Adams and David(1994)[10].

IV. METHODOLOGY

The formulation of Development Control Regulations (DCR) for the Dimapur Planning area requires a comprehensive methodology that involves multiple stages. The following methodology can be used for the formulation of DCR for Dimapur Planning area:

a. Algorithm

1. Define the scope of the regulations and the objectives they are intended to achieve.
2. Conduct a baseline study of the existing conditions of the planning area, including its land use patterns, demographics, infrastructure, natural resources, and environmental factors.

3. Review relevant national and state laws, policies, and guidelines related to urban planning and development control.
4. Consult with stakeholders, including residents, businesses, civic groups, government agencies, and technical experts, to identify their concerns and priorities for the planning area.
5. Conduct a SWOT (strengths, weaknesses, opportunities, and threats) analysis of the planning area to identify key issues and challenges.
6. Develop a land use plan and zoning map for the planning area, based on the objectives, baseline study, and stakeholder input.
7. Define development control parameters, such as building heights, setbacks, parking requirements, and building materials, for each zoning category.
8. Develop regulations for specific development types, such as residential, commercial, industrial, and institutional, based on best practices and local needs.
9. Develop provisions for heritage conservation, environmental protection, disaster management, and social infrastructure, as relevant to the planning area.
10. Draft the Development Control Regulations document, incorporating all the above components, and circulate it for public comments and feedback.
11. Revise the draft document based on the feedback received and finalize the Development Control Regulations.

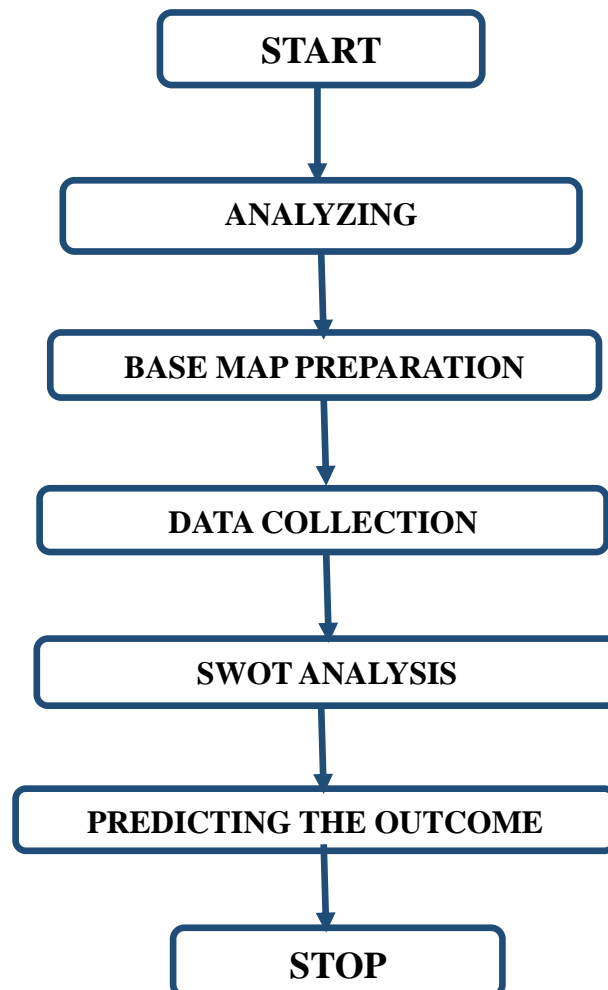


Figure 1: Design Model of Development Control regulations

V. PLANNING STRATEGIES

The formulation of Development Control Regulations (DCR) for Dimapur Planning area can be guided by the following planning strategies:

a. *Zoning Regulations:*

Zoning regulations are critical to ensure that land uses are compatible with the surrounding environment and to prevent incompatible land uses from coming up in close proximity. The planning area can be divided into different zones based on the existing and desired land use patterns. The zoning regulations should specify the permissible land uses, building height, setback, and other design elements in each zone. The zoning regulations should also take into account the environmental, social, and economic considerations in the planning area.

b. *Building Regulations*

Building regulations are important to ensure that buildings are compatible with the surrounding environment and do not cause any adverse impacts. The building regulations should prescribe the height, setback, and other design elements of buildings, as well as the permissible floor area ratio and ground coverage in different zones. The building regulations should also ensure that the buildings are designed to be energy-efficient and environmentally sustainable.

c. *Environmental Regulations*

Environmental regulations are critical to protect the natural environment in the planning area, such as water bodies, forests, and wildlife habitats. The environmental regulations should include guidelines for waste management, the use of renewable energy sources, and the protection of natural resources. The environmental regulations should also consider the impact of development on the climate and ensure that the planning area is designed to be resilient to climate change.

d. *Heritage Conservation*

Heritage conservation is important to protect the historical and cultural significance of the planning area. The DCR should include guidelines that recognize and protect heritage buildings and sites in the planning area. The guidelines should specify the requirements for conservation and restoration of such buildings and sites.

e. *Parking and Transportation Regulations*

Parking and transportation regulations are important to ensure that the planning area is designed to be accessible and convenient for all. The parking and transportation regulations should include guidelines for the provision of parking spaces, the design of streets, and the provision of public transport. The parking and transportation regulations should also encourage the use of sustainable modes of transport, such as cycling and walking.

f. *Institutional Mechanism*

The institutional mechanism for implementing the DCR is critical to ensure effective implementation of the regulations. The institutional mechanism should be transparent and accountable, and should involve the planning authority, developers, and citizens. The institutional mechanism should specify the roles and responsibilities of the various stakeholders and ensure that the DCR is implemented in a timely and effective manner.

Overall, the planning strategies for the formulation of DCR for Dimapur Planning area should aim to balance the economic, social, and environmental considerations and ensure sustainable development in

the planning area. The strategies should also be aligned with the expectations of the stakeholders and should ensure effective implementation of the regulations.

VI. CONCLUSION

In conclusion, the formulation of Development Control Regulations (DCR) for Dimapur Planning area requires a comprehensive methodology that involves data collection, analysis, stakeholder consultation, formulation of draft DCR, public consultation, finalization of DCR, and implementation. The planning strategies for the DCR should aim to balance the economic, social, and environmental considerations and ensure sustainable development in the planning area. The strategies should include zoning regulations, building regulations, environmental regulations, heritage conservation, parking and transportation regulations, and an institutional mechanism for implementation.

The formulation of DCR for Dimapur Planning area is critical to ensure that the development in the planning area is sustainable, efficient, and environmentally friendly. The DCR should ensure that the land use is compatible with the surrounding environment and that the buildings are designed to be energy-efficient and environmentally sustainable. The DCR should also protect the natural environment and the heritage buildings and sites in the planning area. Additionally, the DCR should ensure that the planning area is accessible and convenient for all and encourages the use of sustainable modes of transport.

Overall, the formulation of DCR for Dimapur Planning area should aim to ensure that the development in the planning area is socially, economically, and environmentally sustainable and aligned with the expectations of the stakeholders. The successful implementation of the DCR will require the commitment and collaboration of all stakeholders, including the planning authority, developers, and citizens.

VII. FUTURE WORK

There is limited published literature available on the formulation of Development Control Regulations (DCR) specifically for Dimapur Planning area which need to be work out to find the solutions in coming future. Since maximum of the Cities in India have started their Smart Cities Project which need proper planning and Development Control in all the respective regulations to ensure that there is proper Service Level agreement (SLA).

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