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## Form-Based Code As A Tool For Sustainable Development: A Case Of Puzhakkal Development Corridor, Thrissur

More than half of the world population lives in urban areas. According to the UN World Urbanization Prospects 2018, the urban population is going to have a rapid increase. There will be an increase of about 2.5 billion in the urban population by 2050, mainly in developing countries like Africa and Asia. Population increase and rural to urban migration are the major reasons for urbanization. The overexploitation of resources, climate change, and increased rate of pollution are the major issues caused due to urbanizations. To address these issues there is a need for sustainable development which is addressing the environmental, economic, and social aspects.

A Form-Based Code is a land development regulation that fosters predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. The conventional zoning regulations resulted in sprawl development, fragmentation of cities, and segregation of incompatible uses. Form-Based Codes emerged in the 1980s as a response to the ineffectiveness of conventional zoning tools.

This thesis looks into demonstrating how FBC can be used as an effective tool in addressing the sustainability aspects. The case studies for Form-Based Codes as well as sustainability are analysed to understand and formulate how these can be used for the creation of sustainable developments. Hercules, California; Cincinnati, Ohio; and Flagstaff, Arizona are the case studies referred to understand the structure and processes of FBC and how these are defined. From the selected indicators of sustainability used by international organizations 12 parameters of sustainability that are interlinked to physical form are identified. Several case studies are carried out to understand how these parameters of sustainability are achieved in cities and strategies are inferred. From this analysis, a theoretical framework is created for the formulation of Form based Code for sustainable development.

Thrissur popularly known as the cultural capital of Kerala and located in the central part of Kerala. Thrissur is famous for Thrissur pooram and its marvellous urban setting. When talking about the context of urbanization trends it is ranked as the 13th fastest growing cities in the world by the Economist magazine based on the UN data. When looking into the ecological setting Thrissur city is located in the midland region of Kerala, adjoined to the unique and sensitive Kole wetland region. It is a listed site in the Ramsar Convention on wetlands and one of the important locations in Central Asian Flyway of migratory birds. The Kole wetlands act as a natural drain of Thrissur city as well as one of the major rice cultivation areas in Kerala. The thesis focus on to Puzhakkal Padam area in the periphery of Thrissur city, where the SH 69 passes through this Kole wetlands. In this area, large scale land use conversions are happening for private developments like Sobha city integrated township. The proposed master plan of Thrissur corporation has come up with development proposals like mobility hub, industrial park as well as mixed-use zones in this area. Considering the ecological significance as well as the current development trends we need sustainable development for this area.

The site is understood through the analysis of different layers of ecology, morphology, infrastructure from regional, city, and precinct levels. The existing issues prevailing in the site are identified. The current sprawl developments created by the private gated and plotted projects which are happening as well as proposed in the Puzhakkal area will adversely impact the urbanization in Thrissur city and its ecological balance. Frequent floods during monsoon seasons are one of the major issues created as a result of this current development. Through the regulating plan and control of the public and private realm, we can achieve the parameters of sustainability in the precinct. So this Thesis looks into creating a contextual Form-Based Code for the sustainable development of the Puzhakkal development corridor area.

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