

A Study of the Planning and Designing of the Built Environment under the Green Transit-Oriented Development

Authors : Wann-Ming Wey

Abstract : In recent years, the problems of global climate change and natural disasters have induced the concerns and attentions of environmental sustainability issues for the public. Aside from the environmental planning efforts done for human environment, Transit-Oriented Development (TOD) has been widely used as one of the future solutions for the sustainable city development. In order to be more consistent with the urban sustainable development, the development of the built environment planning based on the concept of Green TOD which combines both TOD and Green Urbanism is adapted here. The connotation of the urban development under the green TOD including the design toward environment protect, the maximum enhancement resources and the efficiency of energy use, use technology to construct green buildings and protected areas, natural ecosystems and communities linked, etc. Green TOD is not only to provide the solution to urban traffic problems, but to direct more sustainable and greener consideration for future urban development planning and design. In this study, we use both the TOD and Green Urbanism concepts to proceed to the study of the built environment planning and design. Fuzzy Delphi Technique (FDT) is utilized to screen suitable criteria of the green TOD. Furthermore, Fuzzy Analytic Network Process (FANP) and Quality Function Deployment (QFD) were then developed to evaluate the criteria and prioritize the alternatives. The study results can be regarded as the future guidelines of the built environment planning and designing under green TOD development in Taiwan.

Keywords : green TOD, built environment, fuzzy delphi technique, quality function deployment, fuzzy analytic network process

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