



Title	Environment Behavior Design for Improving the Urban Street Space in Vietnam Metropolitan Area with Rapid Urbanization [an abstract of dissertation and a summary of dissertation review]
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学 位 論 文 内 容 の 要 旨

博士の専攻分野の名称 博士（工学） 氏名 Do Think Duy

学 位 論 文 題 名

Environment Behavior Design for Improving the Urban Street Space in Vietnam Metropolitan Area
with Rapid Urbanization

(急速な都市化が進むベトナム都市圏における街路空間の改善に関する環境行動デザイン研究)

Inevitably, the urbanization process exerts both positive and adverse impacts on urban areas. Metropolitan cities in Vietnam is facing a large rural population moving to such cities. As a consequence, fewer open space and public space are found in cities. Most activities of inhabitants are performed in street space which includes both sidewalks and roadways. Indeed, streets are space for not only traffic but also other activities. The municipal government undertakes street space-improving campaigns supporting residential use to alleviate the shortage of open public space. Street space is improved by widening, adding small green zones or street furniture, improving quality of surface finishes and demarcation of parking. Also, some regulations were enforced to restrict trading activities to reduce conflicts between pedestrians and shop-owners. Newly renovated street space obviously brings lots of benefits to citizens; although typically designed in a sanitized manner that is unfamiliar to the residents. Meanwhile, in old streets, activities take place in a vivid way, and more importantly, featured cultures of locals remain. Based on environment behavior study approach, this study is to understand the characteristics of street space and relationship between street environment and users' activities in Da Nang Vietnam and to prefer solutions towards the improvements. A further aim is to examine the ways in which street space environment characteristics can affect urban residents' cognition, behaviors and concerns in the contemporary urban street.

This dissertation addresses:

Chapter One: History and current state of street space environment problems, including changes in street space that aim to promote users' behaviors. In addition, the research hypothesis, research questions, scope, structure, objective and significance of this study are explained in this section.

Chapter Two: Literature review related to open street space overseas and in Vietnam, including theoretical approaches, implementation, and trends; including theories of environment behavior study in relation to street space development.

Chapter Three: Definition and development of basic characteristics of street space on all; including the current improvement. Street space in major cities in Vietnam and discusses the various aspects related to challenges and specifically explores the management situation and the life along the street space in Da Nang.

Chapter Four: Describes the research methodologies including qualitation and quantitation; Questionnaires, Capture Evaluation Method survey, Visual Encounter Survey method, Behavior Mapping and some statistical analysis to understand the underlying information resulting from the investigation data.

Chapter Five: Residents concerns in the street space with emphasis on physical settings that attract

users; findings show that people tend to frequently pay attention to 13 fundamental physical elements out of the 88 elements recorded; those factors which are most effected by development street space strategy and management are identified for prioritization in future developments.

Chapter Six: aims to understand users' behaviors on an unimproved street space and highlights the positive and negative impacts of the environment on users; revealing the different types of environmental behaviors that need to be considered in the improvement process focusing on influencing behaviors through the built environment.

Chapter Seven: Comparing the difference between improved and unimproved streets in various aspects including users' behaviors, users' cognition and the environment-behavior relationship within street and surrounding; Identifying 8 physical attributes needing consideration during the street development process. Improved and unimproved street shares 2 attributes e.g. (a) shop-house relationship and nature proximity, (b) sidewalk accessibility and permeability. And it differs in 6 attributes e.g. on improved street that consists of (f) degree of coverage and relaxation facilities, (g) degree of walking paths and related paths, (h) distribution of street stalls; on unimproved street that consists of (c) degree of openness, (d) degree of connections, (e) degree of tidiness. Whilst the findings on users' perception on each type of street indicated that both physical and socio-personal factors significantly contribute to street space usage in different income groups. The lower income people reporting significantly much access to the street space than their higher income counterparts and the number of lower income people slightly decreases when the quality of street space is enhanced.

Chapter Eight: Concludes with a discussion of the implications of this study in the street space development, suggestions, prospect works and improvement process. The street space improvement may be a proper and affordable solution to fill the gap in open public space in urban area in developing countries like Vietnam. Therefore, it is important to examine further steps toward street space development and identifying factors for consideration in street space design, planning, management and policy development. For doing that, three approaches have been proposed including street design and planning handbook, street management handbook, and various association and information systems. The specific design and planning principles, regulations and concepts of street component e.g. buffer and commercial zone were explained and illustrated in design and planning handbook. The second handbook contributes principles, usage management by street's elements, maintenance managements and suggesting a new policy for the enforcement forces and punishment form for violators. Finally, the associations related to street's users need to be established that play an important role in public education. Indeed, the street space development and improvement process in Vietnam currently neglects the role of users' participation, while users' awareness and satisfying their needs may work as the key drive to promote regulation compliance and development design and development plan. City planning and street space planning and design may have closely linkage that lies on relationship between residence-commercial/ trading place. It is important to figure out the key stone in city planning that contributes to the liveable community and strong social coherence.