

## Abstract

Presently, architectural design is rarely done on the basis of a systematic scientific process, and often relies on imagination to predict the outcome of the work. Therefore it is very difficult to control standards and true meanings of architecture. Basically, architectural value depends on the satisfaction of its users, which cannot be definitely quantified. This is one of the weaknesses of the development of the architectural profession.

This thesis intends to explore a new approach in architectural design and planning methodology, and to systematically identify architecture using the study technique of Space Syntax (Bill Hillier, University College London). The Space Syntax technique is a geometrical measurement and empirical studies of architecture and urban morphology. It consists of an observation of the phenomenon of space utilization involving pedestrian and vehicular movements. The analytical concept of Space Syntax is based on the fundamental of the "*Theory of Natural Movement*", indicating the level of space utilization and internal circulation of architecture. Its idea is that a city is always harmonious with the network connection of public spatial units. This method is known to be the first and only architectural theory that is capable of indicating the level of accessibility of spaces statistically using computer modeling to predict the pattern of movement in towns and cities.

Thammasat University, Tha-Prachan campus is one of the country's oldest educational institutions. Located in Ratanakosin, the country's most significant cultural are a surrounded by elegant architectural and historical heritages, Thammasat University is located on the bank of the Chao Praya River, an important transportation hub between Tha-Prachan and Praatit Road. Many problems in space usage of the Thammasat University area have been founded. These mostly result from the alteration of functions and the continuous construction of new buildings without proper planning. This affects the quality of life of the students and staff of the University. The research aims to study the overall physical aspect and the configurative structure of the

University, as well as how they are related to its contexts and users' behavior. The core study method is an investigation of the circulation network, both pedestrian and vehicular.

This research presents a proposal for the master plan's improvement in both physical and policy terms, in order to allow the utilization of the space that conforms with the future development of Thammasat University. The other interesting issue found in the research is the logical relationship of the area preferred by the users is the area that is one step next to the integrators. This is because humans require visual perception to help realize that they are part of a public system, while privacy has to be preserved at the same time. Therefore, a preferred area is an area that has a good view of the human interactions while not being crowdedly layered by circulation. On the configurative analysis of the urban context, it is found that the main internal circulation is preferred by various groups of users, particularly the local integration. Onsite observation shows that the most preferred route is the one that connects the Tha-Prachan and Pra-Athit areas, because it allows external users to use the route and public space inside the University consistently.

From the result of this research in the view of the development policy of the University to bring Thammasat *"to be excellent in academic, to maintain justice and to contribute to the society,"* it is apparent that there is potential to strengthen the relationships between the university and the community, as well as the students and the local people. Consequently, the development of Thammasat University's master plan should be aimed to enrich the Tha-Prachan campus, embracing a rigorous academic atmosphere and broaden educational resources which thoroughly contribute to the society.