Thesis Title   Computer Applications for Urban Design and Planning
                      in Thailand

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ABSTRACT

The objective of this research is to study organizational computer usage in urban design and planning departments of various authorities such as the Department of Town and Planning, the Ministry of Interior, the Bangkok Metropolitan Administration and other Municipalities. The study focuses on applications of computers in planning tasks in each department in order to propose guidelines suggesting utilization and organizational operation of computer systems in these departments based on concepts, theories, criteria and past experiences found in literatures related to computer field.

This study bases on system analysis theory and collected data involving computer operation in each department using a questionnaire interview and other documents. An analysis was then performed using the theory which examines: roles of computer in each department, preferences for computer applications, limitations in computer applications, problems of computer applications, and polcies and plans involved.

The analysis indicated that computers were tools which can be used only some parts in the process of planning. Most of the

time, they were not utilized up to their full capability, but mostly used in subsystems which work only in its own division without linkage to others in the departments. These caused repetition in computer operations and obstruct the system as a whole.

The researcher proposes appropriated computer applications by creating 3 alternative computer system models: centralized application system, decentralized application system and relation application system. Decentralized application system is recommended based on check-list of criteria evaluation method. Using this system, these planning departments should establish sub-division specially responsible for handling of computer operation and own computer system which contact directly to other divisions in terms of storing retreiving data and programing. Computer hardware in this system should be a minicomputer in order to handle information as well as a large number of users at the same time. Each subsystem should has hardware efficiently and appropriately for usage in its own division such as micro-computer or work station computer. Software and data base manaegment systems should be created. The researcher recommends 6 systems, consisting of : administration & management system, surveying & data collection system, analysis & research system, design & planning system, evaluation system, and presentation & reporting system. As an example for the system application, the researcher has made some experimentation by using "Auto CAD" software in designing central business district of Chiangrai urban area. Furthermore, the researcher also suggests that a number of computer staffs at all levels in each division should be increased, along with urban designers and planners should be additionally trained in computer knowledge and application.

Finally, the researcher believes that the above recommendations would be useful for relevant organizations for utilizing computers in their planning process more efficiently.