SUMMARY

The school building stock in Singapore is substantially well over 2.5 million square metres in physical gross floor area. This asset needs to be protected and managed for optimum usage and maximum benefits. As the stock is being maintained, renewed and expanded, records of various kinds about the school properties are created and some are modified. These records are often handled by three parties concerned, the Ministry of Education (MOE), the school users and the maintenance and development agents. They are kept separately, by the different parties, in many forms.

The objective of the dissertation is to examine the present situation and propose an alternative system of information management for school building records to meet the current as well as the perceived future needs of the major parties involved in the maintenance and management of schools in Singapore.

The methodology adopted for research is a systems approach. Firstly, an understanding of the present situation was established. Secondly, an ideal model solution was formulated through a good understanding of the current developments in the field of information management for facility management. This was then checked against the real world constraints and a practical model was formulated.

Effective management of the school buildings requires accurate and pertinent information on the buildings. There is a need for information in the area of strategic planning, facility planning and maintenance management. These are the responsibilities of (a) MOE, (b) school principals and (c) maintenance management agents, such as the Public Works Department (PWD) for government schools.
The current practices concerning the maintenance and management of school buildings were examined through a school survey and through interviews with the PWD and MOE. Questionnaires were sent to 126 selected representative schools and junior colleges. 49 of them, or 14% of the existing lot of schools and junior colleges, responded to the survey. A large proportion, averaging about 75%, of the respondents indicated that they performed minor maintenance works themselves albeit to varying degrees of frequency.

From the survey, information on buildings seems not too lacking for the functions it serves, although not to the ideal level. The information gathered from PWD and MOE reveals that a major problem seems to be that building records are kept separately by the different parties, in many forms and to varying levels of details. These records, although may be similar, are not coordinated; some are inconsistent and some are duplicated. Duplication of information results in doubling of effort in updating and additional effort in verification for consistency. At certain times, needed information is held partially in one department while the rest is held in another. This has resulted in work flow having to cross departmental boundaries and back at unavoidable frequency.

To overcome the problems, duplication of information storage has to be avoided. Therefore it is imperative to have building information stored in a common data bank. The proposed Building Record System (BRS) should be a common building database. It should exploit the new developments in information technology to the fullest. The BRS would need to capture building information of two forms, textual and graphical. Computer-aided design and drafting technology has enabled these two forms of information to be integrated. This would enable users of the BRS to access all textual and graphical building information in the same medium, in the electronic environment.
The BRS can be set up with the integration of the infrastructural networks of two existing systems, namely, the Estate Management System of PWD and the School Link System of MOE. The link-up of the two systems networks would enable all the three parties access the common building records and create effective communication links among them.