

A Study on Strategy and System to Achieve a Well-Designed School Building

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The importance of school building quality is unquestionable when more than 7.6 million school children, or 16% of Korea's population spend at least 8 hours a day in school buildings. School building quality has a huge influence on students' academic achievement (Lance W. Roberts, 2008), and this is arousing public interest in school building quality in Korea, a country where people have great fervor for education and the location of schools has a big impact on local communities.

The function and role of school are changing according to various future-oriented education models such as open-ended learning cycle, community learning center, re-schooling, network system and de-schooling, which reflect recent social demands related to discussions on sustainability, low birth rate and ageing. However, most schools in Korea are being designed and managed based on the school building design standards set more than 10 years ago. School buildings constructed as BTL (Build-Transfer-Lease) projects, a method introduced for financing, tend to focus only on external appearance, including exterior materials and shape, due to the flaws of the BTL process.

It is important to design and manage school buildings according to the needs of users expressed in the planning and design process, so that users can have a greater satisfaction with school buildings. In Korea, however, only architect and officials of local education authorities participate in the process, and users, their needs and changes in social conditions are ignored.

Therefore, a more systematic design quality management is required to design

and construct school buildings that address and respond to various social and cultural needs. We need to begin with taking a close look at the needs for school buildings, current state of school building design and its quality management.

This study suggests "cooperative system for well-designed school" as a process of enhancing the participation of stakeholders in order to increase user satisfaction as well as design quality by reflecting design experts' experience. It also proposes four methods for the implementation of the cooperative system suggested above: rational and flexible design standards and review criteria, continuous quality management through review and monitoring in the design process, support for experts who can make up for any shortcomings of participants, and reflection of users' opinion through feedback on the design.

This study presents the results of a survey on user awareness and design quality of school buildings, which was conducted to identify various demands and needs for school buildings and analyze how well the existing school buildings address them.

The survey shows that, despite the fact that a lot of investment and efforts were made to improve school building design for the last 10 years, users still have unfavorable views on the exterior and image of school buildings that are lacking variety. It was also found out that school buildings are not satisfying the demands of society, which is changing fast due to low birth rate and ageing. The needs of users now being neglected include diversification, quality improvement, multi-purpose classroom or subject-specific classroom. Schools in Korea still have monotonous, square shape buildings and playgrounds that look like drill grounds of the military, with some partial changes being larger size of buildings and more diverse exterior materials.

What are the causes of the gap between the design needs and the current situation? This study argues that it is because the demands and needs are not reflected in the design process of school buildings. It also presents problems of school building design and solutions to them based on the analysis on the current state of design quality management in Korea. First, planning needs to be included in design process so that each school can set a clear goal for addressing social demands

and characteristics. Second, monitoring and feedback mechanism, including review, advice and user opinion hearing, needs to be utilized in school building design. Third, how to respond to future changes in surrounding conditions needs to become a topic for discussion. Fourth, the range of participation, now confined to architects and urban engineering experts, needs to be expanded. Considering the fact that school buildings embody education policies and programs, education experts and students, who actually use them, should be included in design process.

Our thoughts on the role and value of school buildings need to undergo a fundamental change, so that the cooperation and monitoring system that now exist in school building design process can work effectively. In this respect, we can take note of the DQIFS (Design Quality Indicator for Schools) of Britain. The DQIFS ensures consistency of design policy that is determined in the planning process. Thus, it can be utilized as a tool to set clear design goals in the beginning stage and prevent them from changing frequently due to time and budget restraints. However, as Korea has different circumstances from Britain, we need to make the review criteria simpler, and come up with management skills such as holding workshops to encourage the participation of non-experts.

Based on the demands and needs for school buildings and the current situation of their design found out in various surveys and analysis described above, this study proposes a cooperative system for well-designed school and its management strategies. Cooperative system for well-designed school basically consists of two parts: participation and support in the planning and design process, and monitoring and feedback on the proposed design. The system includes four management steps.

First, participation structure, together with planning and design process needs to be improved. It needs to be recognized that construction begins with planning, and architects and users need to participate from the beginning so that the investment can result in higher school building quality. Education and school building experts needs to be organized into a network so that they can cooperate with each other and their monitoring and feedback process is well-structured. Second, a design quality management tool needs to be developed. Third, guidelines for an appropriate management of the cooperative system for well-designed school needs to be suggested. It could include incentives for active application of the system or

punishments for illegitimate management. Fourth, surveys on future demands and users' needs should be conducted regularly, and the results need to be utilized in the planning process.

These surveys and research can be used as basis for creating a more systematic strategy to improve design quality of school buildings. Discussions and the cooperative system for well-designed school with an improved participation structure proposed in this study can be utilized as basis for developing various policies for school building design quality management.

Key words : school building, design quality management, design quality, monitoring and involvement in design process.