ABSTRACT

As a post-secondary institute, the Institute of Technical Education (ITE) needs to ensure that the quality of its training programmes, its training staff and its physical training facilities meet the expectations and aspirations of secondary school leavers. Currently ITE has found that it is quite costly to maintain some of the existing Technical Institutes which have inherent maintenance problems. Even those Technical Institutes built in the 1980s were found to have design defects and inadequacies which resulted in relatively high maintenance costs.

As ITE will be embarking on its development/upgrading of its Technical Institutes, it is important to ensure that the occurrence of design-related maintenance problems can be avoided.

The objective of the dissertation is to look into measures to minimise maintenance problems especially those design-related ones from occurring in the new/upgraded ITE Technical Institutes. It will focus on the physical training facilities and aims to minimise such maintenance problems so as to provide a conducive, safe and less disruptive training environment for the students.

Design and maintenance have a close relationship which is well recognised. Many maintenance problems that arise could be prevented and avoided if these are considered in the design. The study revealed that the annual maintenance expenditure in three of the Technical Institutes which were built in 1980s was relatively high and about 35% of the expenditure was on rectifying design-related maintenance problems even after only 3 to 4 years of occupancy.
The study revealed that the inappropriate design, poor detailing and wrong choice of materials used as causes for design-related maintenance problems. They occurred due to the negligence of the consultants and the lack of involvement by the client. The inadequate project brief; the frequent changes to the project’s requirements during the design stages; and lack of communication and coordination among the various working parties were also cited as contributory factors leading to design-related maintenance problems.

The functional and financial consequences of design faults are very problematical for the users. Hence when designing new Technical Institutes, the consultants should, besides meeting functional requirements, look into the appropriateness of the architectural, structural and building services aspects; pay attention to the detailing; and select the right and appropriate materials for use. It is thus important to select good and reputable consultants who have good technical resources support and who give full attention to the design and development of the project.

ITE could also form a project team to develop an informative and adequate Project Brief for the development projects and keep changes to requirements to a minimum. Increase in communication and coordination during the implementation of the project between various parties should also be encouraged.

It is undoubtedly beneficial to take steps to minimise design-related maintenance problems and consequently incurring lesser maintenance expenditure. This must surely be in the national interest.