ABSTRACT

Materials are undeniably a major resource in a public housing project, accounting for more than sixty percent of the total building cost. The management of materials is therefore an important function and should be accorded attention by all the parties involved in the construction process. As a developer-cum-designer, the Housing and Development Board (HDB), has a vested interest in the development of materials management in the public housing sector. The HDB must necessarily strive to continuously improve its performance, while tirelessly assisting and facilitating the contractors and materials manufacturers or suppliers to upgrade their operations.

This dissertation attempts to provide an insight into this development. It first reviews the past and current efforts of the HDB in striving to improve its management of materials and how these efforts can also help the contractors to upgrade their own firms. The dissertation specifically describes direct improvements in key areas such as design detail, modular coordination, use of precast components, factory-fabrication of steel reinforcement, deployment of materials handling equipment and plant, and rationalisation of work methods via work study. It also discusses improvements in other material-related aspects such as long-term materials planning programme, quality and cost management systems, contract forms and computer-based information system. The dissertation then proceeds to identify major problem areas in the current practices of materials management in the contractor's organisation. These include: a diffused function of materials planning and control; failure to adopt appropriate management tools; poor management of materials wastage; a "labour only" subcontracting system with inherent problems; and highly excessive stocks on the site.

Finally, the dissertation proposes a system of improvement measures that can integrate with other systems in the project environment, prevent foreseeable problems, and adapt to the changing requirements of other systems. The proposed improvement measures are: employing a Materials & Quality Controller; ensuring effective site communication; streamlining flow of materials; setting up a computerised materials management system; installing a control system for materials wastage; and motivating and upgrading the subcontractors. The necessary prerequisites include: the support of management, overcoming resistance of organisation members to planned change, and phasing of the implementation of improvement measures.