A BENCHMARK MODEL FOR CONSTRUCTION DURATION IN PUBLIC HOUSING DEVELOPMENTS

Albert P. C. CHAN and Daniel W. M. CHAN

Department of Building and Real Estate, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, China.

1 E-mail: bsachan@inet.polyu.edu.hk

Abstract
Construction time has been perceived to be one of the most essential performance indicators among numerous successful projects. Considerable effort has been dedicated to the issue of how to benchmark best practice measures of construction time performance (CTP) for use in the construction industry. An industry-wide survey was launched to identify a set of critical factors affecting construction durations of high-rise public housing projects in Hong Kong. Data was derived from a representative sample of 56 standard ‘Harmony’ type residential blocks via mailed standard questionnaires. A multiple regression technique was applied to data analysis and model development. The results indicated that a benchmark model for predicting the durations of various primary work packages could be generated based on a group of significant variables identified. The testing and validity of the developed model was conducted using further project data obtained from the client organisation and confirmed significant. The model usefulness to future public housing developments was also highlighted. The regression model serves as an essential tool for benchmarking an optimum time estimate for delivery of a public housing project. A comprehensive study is currently being undertaken for private sector housing blocks in Hong Kong by adopting similar research methodology, for national and international comparisons.

Keywords
Benchmark model; Construction duration; Public housing; Hong Kong; Private housing

INTRODUCTION

While the construction industry is one of the main pillars of Hong Kong today’s economy, project delay is still a frequent outcome in the territory (CIRC 2001). Accurate construction planning is a key determinant in ensuring the delivery of a project on schedule and within budget (Chan 1996). A contracting organisation needs a sound time-planning and control system which allows not only efficient and effective management of an individual project but also the likely need to manage multiple projects simultaneously (Griffith et al. 2000).

Although the philosophy of ‘benchmarking’ has proliferated in many manufacturing industries, relatively little attention has so far been drawn to its potential value in the construction industry. Benchmarking is the search for the best practices that will lead to superior performance of an organisation (Camp 1989). A plethora of researchers in construction management and practitioners in the construction industry have acknowledged the essence of developing best practice benchmark measures of construction time performance (CTP) to be used by clients, consultants and contractors (Nkado 1991; Walker 1994; Blyth 1995; MacKenzie 1996; Chan 1996; Chan 1998; Walker & Vines 2000; Ng et al. 2001). Previous work has modelled the project construction duration based solely on scope factors principally represented by construction cost. However, a recognised appreciation of other significant attributes contributing to construction time has paved the way for further study in which multi-dimensional prediction models were established.