





# INTRODUCTION

## *Objective*

The objective of this Guide is to promote to developers and architects, greater use of precast components and prefabricated reinforcement in their projects. It provides general guidelines on design, examples of projects which have used prefabrication, types of components and a catalogue of structural components. The aim is to promote the wider use of these components so as to achieve more economical production and therefore lower unit costs.

These recommendations are based on a survey conducted to identify the sizes of building components commonly adopted in various types of building projects. The survey enabled the Working Committee On Precast Components to work out a catalogue of components which can be produced by local precasters. The Working Committee On Prefabricated Reinforcement also compiled information on welded wire fabrics available from the local suppliers.

## *Principles Of Buildable Design*

The shortage of workers, expectation for better quality and demand for shorter construction period require the construction industry to be more efficient. The best way to achieve greater efficiency is to adopt designs which have a high degree of buildability. The CIDB Buildable Design Appraisal System (BDAS) can be used to check the buildability of a design. Buildability is determined by the extent to which the principles **standardisation, simplicity and single integrated elements (the 3S's)** are observed, right from the design stage. Details of Buildable Design Appraisal System can be obtained from CIDB.

**Standardisation** refers to the repetition of grids, sizes of components and connection details. **Simplicity** means uncomplicated building construction systems and installation details. **Single integrated elements** are those that combine related components together into a single element which may be prefabricated in the factory and installed on site.

A key feature of buildable designs is the use of prefabricated components. Prefabrication has many advantages. It enables projects to achieve a higher level of quality than is possible with cast-in-place construction. It also reduces the need for workers at the site and speeds up construction work.

Developers can play a key role in promoting the use of more buildable designs as their requirements and briefs will influence the design options of Architects and Engineers.

## ***Scope Of The Guide***

This Guide includes a catalogue of the preferred standard sizes of precast structural components and prefabricated reinforcements which are available from local suppliers. There are examples of local and overseas projects which have successfully used precast components and prefabricated reinforcement. Illustrations of architectural precast components are shown. Guidelines on precast design and construction considerations are also included.

CIDB hopes that this Guide will be frequently used by Developers and Architects, in planning their projects. For Engineers, this Guide will be supplemented with the CIDB Precast Design Handbook and CIDB Prefabricated Reinforcement Design Handbook.