

## **ACHIEVING QUALITY IN HOUSING CONSTRUCTION THROUGH STANDARDISATION**

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Construction industry, in Malaysia had experienced a continuous rapid growth, in tandem with the progressive boom of the national economy before it was affected by the economic recession of 1997-98. However, unlike the manufacturing and services industries, the construction industry was plagued with defective works and poor quality. This was mainly due to the fact that the prevailing construction processes commensurate with the materials and construction technologies readily and cheaply available. Unskilled construction workers, inexperienced site supervisors, sub-standard materials, disorganized and labour intensive construction works, rushed construction job and huge demand for the properties regardless of the quality were among the causes of the state of affairs.

Over time, the owner's needs, values and beliefs began to take significance on what is on offer in the market. They began to put more importance on the quality of the properties they bought. The majority now want the house that can fulfil the functional and symbolic needs of "home". On the other hand, stabilising demands and the gaining pressure on the needs of the owner has prompted the developers to improve the "product" for market share. As the market share is very highly correlated to the ability to satisfy owner's needs, developers have got to change accordingly. In short, "quality" properties are essential for effective competition in today's market.

The quality in the housing industry is defined as those meeting the needs, requirements and expectations of the owners, designers, builders, and regulatory agencies at all time.

Major causes of quality failures in the Malaysian construction sector attributed to poor workmanship, improper design, improper specification, and defective materials. In order to achieve high quality in housing the root causes of the above must be tackled.

As a result, the Malaysian government has identified and focussed on the aspect of standardisation as part of its effort to enhance quality in the housing industry. Legislative requirements and procedures will be standardized throughout the country. We believe standardization can support the advancement of economic and social endeavours of the country, including the protection and promotion of the well being of consumers and the environment.

Two areas of standardisation that are currently being promoted and implemented in housing are the standard on Modular Coordination, MS1064 and the standard on uniform design for low-cost housing, CIS 1 & 2.

### **a. Standardisation using Malaysian Standard, MS1064**

MS 1064 is a Malaysian Standard, gazetted in 2001. It specifies dimensional rules in the

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subjects of basic module, preferred module, modular grid, coordination of element, opening and others. This standard make references to ISO Standards namely, ISO1790, ISO2445, ISO1789, etc. All of these concern 'Building construction-Modular Coordination'. It would provide a reference for designers and manufacturers.

The basis of Modular Coordination is essentially based on:

- i) The basic module; M=100mm
- ii) Standardised multi-modules;
- iii) A reference system to define coordinating spaces and zones for building elements and for the components which form them;
- iv) Rules for locating building element within the reference system;
- v) Rules for sizing building component in order to determine their work sizes; and
- vi) Rules for defining preferred sizes for building components and coordinating dimensions for building

We envisage that the industry would reap the benefits of the implementation of M.C. through facilitation of cooperation between building designers, manufacturers, distributors, contractors and authorities. MC would also enable buildings to be so dimensioned that they can be erected with standard components without undue restriction on freedom of design. It would also permit a flexible type of standardisation, which encourages the use of a limited number of standardised building components for the construction of different types of building, thus optimising the number of standard sizes of building components. Another important benefit is the ability of MC to encourage the interchange-ability of components, whatever material, form or method of manufacture. In addition to simplifying site operations by rationalising setting out, positioning and assembly of building components, it would also ensures dimensional coordination between installation (equipment, storage units, other fitted furniture, etc.) as well as with the rest of the building.

**b. Standardisation through Construction industry Standards, CIS 1 and CIS 2**

CIS 1 & 2, are the Construction Industry Standards that specify uniform design and planning requirements for low cost houses in Malaysia. The scope of this standard includes requirement on layout, space and configuration of houses with the aims of ensuring that safety, health, infrastructures and amenities are not denied to the dwellers.

- i) Safety: The standard specifies the requirement for safety of individuals and properties. This includes provision of adequate spaces and configuration for building blocks and access.
- ii) Adequate infrastructures: The standard specifies provision of adequate physical infrastructures, e.g., roads, drainage, sewerage, waste disposal, lighting, telecommunication and other public amenities.
- iii) Physical and mental health: The standard specifies proper building and spaces for good physical and mental well-being of the dwellers. This aspect includes spaces, lighting, recreational areas, privacy, etc.
- iv) Community: The standard also specifies provision of adequate amenities for

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social well-being of the community. The example of this is through provision of school, religious facilities, shops, etc.

The CIS 1 and 2 would ensure that the housing estates for the low-income dweller are developed to minimum standards suitable for human habitation.

#### Conclusion

The standardisation would encourage industrialization, thus, stimulating new construction concepts, techniques and materials, prefabrication, and open building practices. Construction components, which are fabricated in the factory, are better quality controlled than cast in-situ. With the country moving towards globalisation; quality and productivity will be the competitive weapons for the industry. Those who have not given priority in these aspects will lose their competitiveness. The needs and the wants of the owners, the builders, the developers and the government must be fulfilled at all time.