

THE INDUSTRIALISATION OF CONSTRUCTION INDUSTRY THROUGH IBS ROADMAP 2003-2010

The construction industry has for many years maintained the time-tested but labour intensive traditional approach in construction and has invested little in research and development. With the current levels of quality, productivity, safety and excessive reliance on unskilled foreign workers, the state of the local construction industry is not in line with the future development of Malaysia.

As the Knowledge Economy enters its stride into the new millennium, technological advances shall play a major role in changing the competitive work environment in the construction industry. Concurrently, as the demand for production and quality increases, the construction industry must indulge itself in innovations and be supportive of new technological techniques in construction.

Industrialised Building Systems (IBS), which enables off-site

prefabricated or pre-cast building components manufactured at factories, will enable cost saving and quality improvement through construction standardisation and the reduction of labour intensity. IBS offers minimal wastage, less site materials, a cleaner and neater environment, controlled quality and lower total construction costs.

Basically, IBS is a construction process that utilises techniques, products, components, or building systems which involve prefabricated components and on-site installation. From the structural classification, there are five main IBS groups identified as being used in Malaysia.

- Pre-cast Concrete Framing, Panel and Box Systems – pre-cast columns, beams, slabs, 3-D components (balconies, staircases, toilets, lift chambers), permanent concrete formwork, etc;

- Steel Formwork Systems – tunnel forms, beams and columns moulding forms, permanent steel formworks (metal decks), etc;
- Steel Framing Systems – steel beams and columns, portal frames, roof trusses, etc;
- Prefabricated Timber Framing Systems – timber frames, roof trusses, etc;
- Block Work Systems – interlocking concrete masonry units (CMU), lightweight concrete blocks, etc.

As mentioned, the use of IBS assures valuable advantages such as the reduction of unskilled workers, less wastage, less volume of site materials, increased environmental and construction site cleanliness and better quality control, among others.

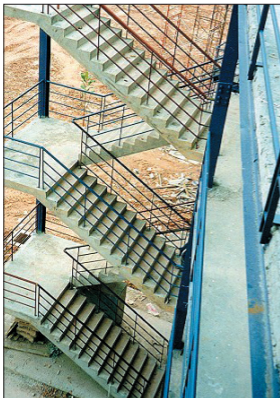
These advantages also promote a safer and more organised construction site, and reduces the completion time of construction. Many world-class Malaysian developers have chosen IBS over the conventional methods for important projects such as the Petronas Twin Towers, Putrajaya, KL Sentral and KLIA.

Even so, the usage of IBS in building is still low. From a survey conducted by the Construction Industry Development Board (CIDB) in Malaysia, the usage level of IBS in the local construction industry stands at only 15% (IBS Survey 2003). The early efforts of the Government to encourage the use of IBS in the construction sector has yet to garner a good response, and this sector is still practicing conventional construction methods that have proven time and again to be wasteful, dangerous and messy.

The low labour cost in Malaysia is the root cause of the industry failing to reform and in addition, the industry is complacent with the current levels of quality, productivity and safety.



IBS assures controlled quality, minimal wastage at site and neater environment



Quality improvement through construction standardisation

However, it cannot be disputed that to be competitive at the international level, it is important for the Malaysian construction industry to evolve and be ready for the globalisation era where an increase in productivity, quality and safety is a must.

According to CIDB, the industry needs one fundamental plan that involves all the important aspects in this evolution process. In this respect, the IBS Roadmap 2003-2010 is formulated as a reference for all parties in implementing all programmes towards the modernisation of the Malaysian construction sector.

The IBS Roadmap 2003-2010 has been discussed and agreed upon at the national level through the IBS Steering Committee and Working Groups organised by CIDB Malaysia where the members are represented by the

government sector, developers, manufacturers, contractors, professional bodies, higher learning institutions, associations, and other interested parties in the construction industry.

The new roadmap is a fine-tuning of the IBS Strategic Plan 1999, with the outlined strategies encompassing manpower, materials, component, machines, management, processes, methods, monetary issues (economic and financial,) marketing and promotion. The roadmap has been endorsed by the Cabinet of Ministers as the blueprint for the total industrialisation of the construction sector and achieving Open Building by 2010.

Based on the IBS Roadmap 2003-2010, positive impacts from the fundamental proposal and new Government incentives are:

- The industry will choose IBS

which guarantees better quality, productivity and safety;

- The enforcement of using Modular Coordination (MC) through Uniform Building By Laws (UBBL) will encourage standardisation and subsequently increase the usage of IBS components. It also encourages participation from manufacturers and assemblers to enter the market, thus reducing the price of IBS components. In essence, MC will facilitate open industrialisation.
 - A screening and selection programme based on IBS standard components will ensure that low quality products are not marketed in the country and this prevents the dumping of foreign IBS products in Malaysia. This aspect is important to avoid failures in IBS projects; and
 - By reducing wet-trades through IBS, the dependency on foreign workers will also diminish, thus gaining billions of Ringgit currently being transferred out by foreign workers to their home countries, and reducing inherent social problems involving these foreign workers.
 - The practice of off-site production of building components, facilitated by standardisation will encourage participation by SMEs for component manufacturing. This will create and sustain a new sub-sector in the manufacturing industry.
- Being a global player in construction also requires serious efforts towards adopting new systems and technologies par excellence with other developed and developing nations. The adoption of IBS will enable Malaysia to penetrate the global market and export its professional and construction expertise while improving our own local development and management. ■