

BUILD FIRST: Prefabricated homes presents a viable and fast solution for an industry plagued by rising building material costs and acute shortage of labour

Will prefab homes go mainstream?



Slow adoption

Prefabricated homes, modular properties or also known as the Industrialised Building Systems (IBS), is a process whereby the construction of a home or other types of buildings offsite is done by utilising systems and techniques involving prefabricated components and on-site installation.

To promote and encourage adoption of prefabricated construction or IBS, the Malaysian Government through the Construction Industry Development Board (CIDB) Malaysia formulated a masterplan called Industrialised Building Systems (IBS) Roadmap 2003-2010 and is currently on its second IBS Roadmap 2011-2015. Two of the main objectives are increasing IBS usage for public sector building projects to 70 per cent and 50 per cent for private sector projects by 2015.

The reality is that except for government projects, the pace and implementation of IBS has been well below these targets so far. Some cite negative perceptions and resistance to change by various industry stakeholders as the main reasons for the slow adoption of IBS.

Market acceptance

Ar Dr Tan Loke Mun, Past President of PAM (Pertubuhan Arkitek Malaysia) agrees that IBS is still a niche market but sees the potential for growth. "It's still in its infancy. It has the potential to succeed but a major hindrance is the higher cost compared to conventional building methods, mainly due to the availability of cheap foreign labour. Although in theory, it can be used for all types of buildings including residential and commercial, in the local context, it is more suited to mass housing with a lot of repetition and modularity."

Dr Tan goes on to cite some examples of projects that he has been involved in using modular methods. "We have been working with system formwork for building structures on many projects. We

have also used prefabricated concrete structure for buildings such as the Setia City Mall. We are using a new floor slab system called 'bubble deck' at the new PAM Centre building," he says.

Dr Tan explains that apart from the cost factor, other hurdles for prefabricated homes include higher costs, market acceptance and stigmatisation where people want solid brick walls rather than plasterboard walls. In developed countries, it is common industry standard to use dry wall partitions for all internal walls but according to Dr Tan, this has not gained market acceptance in Malaysia.

Despite these problems, Dr Tan remains optimistic about the future of modular homes. "With rising costs and shortage of construction labourers, prefabricated homes is definitely the future. In terms of quality and returns on investment, there should not be much difference between conventional and prefabricated homes. Eventually, the market will realise that prefabricated produces a better quality finish. Besides overcoming the current higher cost of prefabricated homes, we need to educate the public on the better quality that can be achieved from IBS," Dr Tan stresses.

He also gives some tips to potential investors on prefabricated properties. "They should select a tried and tested system with requisite warranties and also the flexibility to allow for future additions, renovations and repairs by anyone."

Rapid urbanisation

Not many people outside the industry realise that prefabricated buildings have a long history in Malaysia. "Prefabricated in Malaysia started way back in the 1960s when Dewan Bandaraya Kuala Lumpur (DBKL) built the first prefabricated flats in Jalan Pekeliling," reveals Wan Srihani Wan Mohamed, Lecturer at the Department of Architecture, Faculty of Design & Architecture, Universiti Putra Malaysia (UPM). "Back then, they were standardised, simple and looked like boxes. They needed to be constructed fast to cater to the phenomenon of rapid urbanisation in KL

Dr Tan ... "Prefabricated homes in Malaysia suited to mass housing with a lot of repetition and modularity."

due to rural-urban migration. Officials from the Ministry of Housing and Local Government of Malaysia were sent to Europe to study and understand how it worked."

Wan explains that between the 1970s and 2000s, the term 'prefabricated' gradually changed to IBS (Industrialised Building System) and CIDB was set up to encourage the use of IBS especially in government projects. "IBS is used to refer to a more complex and middle to high-end projects while prefabricated is more known among those practising low-technology construction, even though it means the same. At the moment, most prefabricated/IBS for mass housing are located in and around major cities in Malaysia like Penang, KL and JB because factories producing these prefabricated components are usually located near major cities to reduce transportation costs. Most prefabricated developments are low-cost housing in city centres. Also, most schools are now constructed using IBS," Wan points out.

Pros and cons

Wan says that there are various pros and cons of prefabricated housing to consider. "If we were to look at the time factor, site management and standardisation of quality, it would of course be an advantage to developers and local governments. Prefabricated homes also address issues of fast track delivery. It could even be used to complement conventional housing for the Build-Then-Sell (BTS) concept. Nevertheless, not all contractors are able to deliver projects using IBS. This is due to the fact that the initial costs of the site for manufacturing and heavy machineries are expensive while our labour is still comparatively cheap."

Wan foresees that IBS could have a significant impact in the future but currently our facilities and resources are limited. "At the moment, developers and

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building contractors concentrate mainly on using concrete for construction. Other countries are already looking at other alternative materials such as timber, bamboo, etc. For your information, we are at the research stage of developing our first prefabricated bamboo house in KL. The gap between industry and academic/research is still there but we are gradually engaging with key stakeholders in the construction industry to collaborate on projects."

Long-term benefits

Local prefabricated manufacturers are keen to stress that although the initial costs might be higher, the long-term benefits in quality and finishing outweigh the cost factor. Khoo Tian, Managing Director of O-Stable Panel Sdn Bhd and inventor of a high-end patented prefabricated building system is a passionate advocate of prefabricated properties. "The main advantage of using the prefabricated system is that there is a high degree of quality control from start to finish. We are able to control even the tiniest details of a property's design with precision and consistency."

Khoo explains that in the long run, the quality of prefabricated homes will benefit both home buyers and developers. "Our construction method delivers high quality and energy-saving houses, conferring direct benefits to home owners. This will translate to profitability for developers as well. We have developed a wide range of properties using this method," says Tian who had developed the system with an initial investment of RM6 million based on over 40 years of experience in building construction. His company has built over 1,000 units of various types of properties in Malaysia using this system including schools, single-storey terrace and double-storey detached houses, apartments and even semi-detached factories.

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Amcity Marketing Sdn Bhd
(919019-U)
1st Floor, Balai Berita,
31 Jalan Riong,
59100 Kuala Lumpur

Tel: 1300-226-787
+6017-5432 226,
+603 2284 0898
(advertisement)
Fax: +603 2283 1700

E-mail:
nstred@mediaprima.com.my

Editorial Team

Editor:

Jan Yong
jan.nstred@mediaprima.com.my

Features Editor (Decor):

Yvonne Young
yvonne.nstred@mediaprima.com.my

Senior Writer:

Khairul Khalid
khairul.nstred@mediaprima.com.my

Writer:

Khairie Hisyam Aliman
khairie.nstred@mediaprima.com.my

Advertising:

Pearly Tan
pearly.nstred@mediaprima.com.my

DTP:

Calvert Chang, Kinonato Chong