Construction in China: poised to shake up the global industry?

How China is leading market growth and challenging some old ways of doing business in the global construction industry

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China’s Construction Industry: A Global Game-Changer?

From a meager one percent share in the world construction market in 1990 to almost 15 percent share in 2010, China has emerged as the biggest player in the global construction sector in recent years. Armed with the latest technology and some interesting process innovations, China seems poised to change the rules of the game. Will China set the standard for the world?

China has recently become the world’s second largest economy, both in nominal and PPP terms, after the United States. It is the world’s fastest-growing large economy, averaging 10% growth for the past 30 years.

In line with this macro-economic outlook, the Chinese construction industry is booming. Infrastructure development and construction is taking place all around the world but no one can match the largest building site of all – China. It currently uses half of the world’s concrete and a third of its steel for its ambitious projects. The 2008 Summer Olympics gave the world a glimpse, if any was needed, of the wonders of China’s built-up environment at its best.

\[\text{Growth rates (\%)} \text{ for Construction Spending}\]
\[\text{Source: IHS Global Insight Construction Service}\]

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1 China Orbit, China construction industry, Retrieved 28 January 2011
From building the world’s largest airport terminal in Beijing to the architectural marvel called the “Bird’s Nest” (Beijing National Stadium), China has made its mark on global construction. US$40 billion was spent on the infrastructure and other construction activities for the Beijing Olympics alone.

Exporting Expertise – Chinese Builders take on the world

Nearly half of the world’s new building construction will be in China by 2015, estimates the World Bank.

The role of exports as the driver of China’s economic growth is on the wane, as the financial crisis weakened external demand for manufactured goods. However, China’s construction industry has bucked the trend. Chinese builders are now landing major overseas contracts by learning how to export their expertise.

As many countries rolled out sizable economic stimulus plans in 2009 and 2010, particularly for infrastructure projects, new opportunities opened up for Chinese contractors. Services revenues from overseas construction projects grew to $44.33 billion from January to August 2009, up 34.7%...
percent from the same period in 2008. Many of China’s top construction contractors have placed overseas expansion high on their agenda, since overseas projects normally have higher profit margins than domestic projects.

**Global construction activities by Chinese construction firms**

![Image of construction projects]

*From Left to Right – Rama Bridge, Thailand; Nanyang Technical University Campus, Singapore; Vivian Richards Cricket Ground, Barbados; Sukh Chayn Gardens, Pakistan; Makkah Metro, Saudi Arabia; Universal Studio, Singapore*

In addition to their expertise, Chinese project contractors can provide their customers with access to long-term, low-interest loans from China’s State-owned banks. China’s banks can currently access the world’s

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2 China Daily, China’s construction industry exports its expertise, 28 September 2009
biggest pool of foreign currency reserves, worth more than $2.1 trillion. Such loans are especially valuable at a time when many construction projects around the world are still being stymied for lack of access to credit.

In a nutshell, the biggest advantage for Chinese construction firms doing business abroad is that they are enjoying strong support from their home country.

**Pre-Fabrication – The Way Ahead**

A Chinese construction company took **less than a week**, or 136 hours of work, to **erect and complete** the **outside decoration of a 15-story prefabricated building** in Changsha. Another key trend in China’s construction sector is the use of pre-fabricated materials. A video clip aired on YouTube in June 2010, showing how a Chinese construction company built a hotel in six days, has set off heated debates about Chinese standards of efficiency and quality. In the clip, a Chinese construction company took less than a week, or 136 hours of work, to erect and complete the outside decoration of a 15-story prefabricated building in Changsha, the capital of Central China’s Hunan province.

In contrast to conventional construction projects using bricks and mortar, prefabricated buildings are erected by assembling component parts that have already been produced elsewhere. The technology of using prefabricated materials to erect buildings has given this type of

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3 China Daily, Prefab construction process impresses netizens, 30 November 2010
construction the edge over conventional construction methods in terms of efficiency. The use of pre-fabricated materials or “pre-fab” is not new, nor is it confined to China.

In reaction to this trend, many manufacturers have set up units to produce pre-fabricated materials in China and export them to other countries. The development of this technology might prove to be a game changer for China, as it would allow China to exploit its huge global competitive advantage in labour-intensive manufacturing.

Chinese companies are already manufacturing “ready to move in housing units” and “building blocks” which could be used as low cost housing in developing nations such as Thailand, Pakistan, Bangladesh, India and African nations. The pre-fabricated materials industry is being promoted in a huge way in China, with international exhibitions and conventions taking place to promote the acceptance of this technology among builders world-wide.

Foshan Yaoda Building Material Co., Ltd. is a leading supplier in China which specializes in design and production of prefab houses and environmental material. “Depending on our professional engineers, most of our products got the design patent. Therefore, our products are not only welcomed by our homeland customers, but also popular among many foreign countries, such as Australia, Qatar, Iran, Sudan, Angola and East-south Asia, Middle East and other regions,” said Mr Xu, representative from Foshan Yaoda Building Material.4

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4 Tradekey, Foshan Nanhai Yaoda Co, Ltd, 6 Sept 2008
China's Builders Going Green

Energy consumption by buildings in China grew from 10% of national energy demand in 1970s to 20% in 2006 and is estimated to shoot up to 35% by 2020\(^5\). The booming construction industry in China has also placed unprecedented pressure on water resources. It is estimated that the sector accounts for 16% of total water consumption\(^5\).

China's 11th Five Year Plan (2006-2010) aims to reduce energy consumption per unit of GDP by 20%. The Plan has made improving the energy efficiency of buildings to be critical to achieving this target. China's government plans to achieve the goal by strictly enforcing energy saving standards on new construction and by retrofitting existing public buildings.

In 2005, the government introduced mandatory design standards aimed at energy conservation in public buildings, including adopting energy saving technologies for cooling, heating, ventilation and lighting. In 2006, a new voluntary rating system was introduced which also measured other aspects of sustainability such as site planning, land use, water conservation and internal air quality.

It is likely that the government will set more aggressive Green building targets in the 12th Five Year Plan (2011-2015). The government’s current plans focus more on energy and as a result other Green aspects such as

\(^5\) Climate change corp, The future of green building in China, 17March 2009
water use have been neglected. In future, water conservation will figure more prominently in Green building targets, as China grapples with a long-term shortage of water resources in some parts of the country.

If Chinese construction firms show that they can make buildings quickly, cheaply and in a Green manner, the global construction market may face a tidal wave of inbound Chinese contractors – limited only by host countries’ willingness to tolerate large, short-term influxes of workers from China.

**Conclusion**

China’s construction sector is challenging global norms of efficiency in a number of ways, while China’s economy is creating – and will continue to create, for some time to come – the world’s biggest growth story in global construction.

Moreover, the geography of this growth story is changing. The 12th five year plan by the Chinese government (2011-2015) concentrates on bridging the gap between the rich and the poor. A major corollary of this plan will be the expansion of construction activity (particularly for residential housing) in China’s rural areas, home to roughly one third of the country’s population. In fact, the changes currently going on in rural China are tremendous and under-reported, especially in the Western media, whose focus is always on large cities like Beijing and Shanghai. The consequent growth in rural construction activity will form the next dynamo of growth for the sector, and may see the rise of the next wave of Chinese builders.
These developments make it imperative for international firms in the construction sector – from materials to Building Management Systems to makers of earth-moving equipment – to strengthen their presence across the length and breadth of China. This will enable them not only to sell into domestic building projects in China but also to build relationships with Chinese building firms who may use their products and solutions for overseas building projects in the future.