

China's green building evaluation standard and comparison to the LEED rating system.

The Three Star System

The Ministry of Construction's Green Building Evaluation Standard is China's first attempt to create a local green building standard. As the introduction of the rating system notes, the purpose is to create a voluntary rating system that will encourage green development:

China is now in the phase of rapid economic development, ranking world No. 1 in terms of annual building volume, with significantly growing consumption of resources year by year.

Therefore, scientific development philosophy must be steadily created and seriously implemented, and the concept of sustainable development must be adhered to, to strongly develop green buildings. The purpose of formulating this standard is to regulate evaluation on green buildings and promote the development of green buildings. The evaluation system, introduced in 2006, is credit-based, and allows developers to choose which credits they want to pursue.

The evaluation system has two different standards: one for residential buildings and one for public (i.e. large commercial) buildings. As the rating system describes, Considering current construction market in China, this standard will mainly evaluate residential buildings that are huge in quantities and public buildings that consume much energy and resources, like office buildings, mall buildings and hotel buildings. For evaluation on other buildings, this standard can serve as reference.

The evaluation standard rates buildings with a variety of prerequisites (called "control items" in the Chinese system) and credits (called "general items" in the Chinese system) in six categories:

1. Land savings and outdoor environment
2. Energy savings
3. Water savings
4. Materials savings
5. Indoor environmental quality
6. Operations and management

A seventh category called "Preference items" contains strategies that are both cutting-edge and harder to implement, such as brownfield redevelopment, more than 10% on-site renewable power generation, etc.

The China green building system grants three levels of ratings: 1-star, 2-star, and 3-star, hence the nickname "Three Star System". The charts below show the different ratings for residential and public buildings:

Table 3.2.2-1 Item Requirement for Grade Classification of Green Building (Residential Building)

Grade	General Items (Total: 40 Items)						Preference Items (Total: 9 Items)
	Land Saving & Outdoor Environment (Total: 8 items)	Energy Saving & Energy Utilization (Total: 6 Items)	Water Saving & Water Resource Utilization (Total: 6 Items)	Material Saving & Material Resource Utilization (Total: 7 Items)	Indoor Environment Quality (Total: 6 Items)	Operating Management (Total: 7 Items)	
★	4	2	3	3	2	4	-
★★	5	3	4	4	3	5	3
★★★	6	4	5	5	4	6	5

Table 3.2.2-2 Item Requirement for Grade Classification of Green Building (Public Building)

Grade	General Items (Total: 43 Items)						Preference Items (Total: 14 Items)
	Land Saving & Outdoor Environment (Total: 6 items)	Energy Saving & Energy Utilization (Total: 10 Items)	Water Saving & Water Resource Utilization (Total: 6 Items)	Material Saving & Material Resource Utilization (Total: 8 Items)	Indoor Environment Quality (Total: 6 Items)	Operating Management (Total: 7 Items)	
★	3	4	3	5	3	4	-
★★	4	6	4	6	4	5	6
★★★	5	8	5	7	5	6	10

Similarities between Three Star System and LEED

Those familiar with the LEED rating system will notice many striking similarities between LEED and the China standard.

First, both are credit based systems rather than command and control systems. This gives the developer maximum leeway over what credits they wish to pursue, although some critics of LEED have said this reduces the level of sustainability in LEED rated buildings. China's system does have more prerequisites (32 in residential, 26 in public buildings) than LEED.

Second, the categories are almost the same, save for the Three Star's additional operations and management category. Moreover, the credits within those categories are very similar; things like minimum energy performance, water savings, local materials, and others are seen in both systems.

Third, the rating categories are very similar: 1-, 2- and 3- stars in the Chinese system and Certified, Silver, Gold and Platinum in LEED.

Complement to LEED

One interesting aspect of the Three Star System is that it a rating can only be awarded after one year of property operation:

Evaluation on newly built, expanded or reconstructed residential buildings and office buildings, mall buildings and hotel buildings belonging to public buildings, shall be conducted in one year after turnover to the property owner.

This requires real, measurable reduction. One complaint about LEED is that many credits are based on energy savings predicted by energy modeling, rather than actual certified energy savings. Although New Buildings Institute Data shows that on average, the models accurately predict energy savings, this can vary widely on a building to building basis. The Three Star System remedies this by basing results on hard data, and collection of this data may be an important first step toward better measurement of building energy use in China.

However, this post-facto certification process could slow the market transformation that LEED has driven so efficiently in America. The LEED Core and Shell system allows developers to submit their design and achieve “pre-certification”, which they can then market to prospective tenants before the building is built. This allows developers to capture some of the benefits of going green by getting higher rents and faster lease up and ultimately drives more developers to build green.

Luckily, LEED and China’s Three Star System can work together and complement each other quite nicely. This will allow developers who want to get the marketing benefits of green to pursue LEED Core and Shell pre-certification and then ensure that the predicted energy savings were achieved by going for Three Star certification.

As Rob Watson, “father of LEED” and CEO of [EcoTech International](#), a green building consultancy in the US and China, says: I really don't see LEED or other international green building standards as "competing" with the MOHURD [Three Star] green standard. The real competition is with the standard non-green developments. The MOHURD [Three Star] green standard is more geared for the Chinese market and should appeal to a broader base of developers than LEED. However, key segments of the market are demanding LEED and everyone agrees that the market should not be interfered with. I also believe that, as the cost to certify comes down, I expect the reach of China's green standard and LEED to expand. Watson expects to pursue both the Three Star standard and LEED standards on the projects he works on in China.

All in all, the Three Star System seems to be a good start for China’s nascent green building market. After all, for China to get serious about green development, all buildings will have to be green, not just those at the top end of the market. Hopefully the Three Star System will eventually help make the Chinese real estate market greener, healthier and more prosperous.

(Based on article, www.newwayswiki.org)