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China Aims for Sustainable Development

Move to reduce growing energy use may come too late

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China plans to halve the energy use of buildings by 2010, but some say it is too late to stop ecological disaster

Outright astonishing -- that was one analyst's verdict on the sustainable design plan announced by PRC Vice-Minister of Construction Qiu Baoxing at the Greenbuild conference held in Portland, Oregon, in November last year.

The declaration ordained that all mainland cities must halve the energy use of their buildings by the end of 2010.

The scale of the effort, one of the largest rebuilding projects in history, will be vast. Nonetheless, it just might reach fruition, according to Nabil Nasr, director of the [Center for Integrated Manufacturing Studies](#) at Rochester Institute of Technology in New York.

China's centralized government system and intense motivation would help overcome obstacles, said Nasr, who is also a member of the U.S. [National Research Council's](#) Board on Manufacturing.

"However, reducing the energy use of buildings by half by 2010 is an aggressive goal."

He said the plan would require across-the-board sustainable design: engineering systems for maximum efficiency and minimum environmental impact.

China would also need to curb its unprecedented exponential growth in energy use, he said. The nation's massive economy, fuelled by a population of more than 1 billion people and advances in manufacturing, was becoming a runaway train both in terms of industrial production and consumption.

Nasr pointed out that China was already the world's largest market for cars, appliances and mobile phones.

To make matters worse, the 100-million-strong middle class -- the nation's leading consumer group -- is set to double in numbers over the next five years.

"The resources needed in the future to support continued growth in China are simply unattainable if current consumption patterns continue. Sustainable design technologies offer a vehicle to increase efficiency, which will enhance China's economic growth while allowing for better management of its tremendous environmental challenges," Nasr said.

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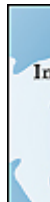


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He singled out a promising sustainable design option -- the practice of re-manufacturing, or taking used components and restoring them to like-new condition. The process, which reduces waste and results in cut-price products, appears to be on the rise.

China has named re-manufacturing as one of its sunrise industries and is investing heavily in the process, even though it demands up to 50 percent more labor than new product manufacturing, according to Nasr.

The Chinese labor market is so competitive that products can be made for half the price of American equivalents.

With China pouring money into its university system and scientific organizations, innovations that improved re-manufacturing methods would almost certainly occur, Nasr said.

Countering criticism that sustainable design entailed an unsustainable financial burden, he admitted that it had very high short-term costs.

"However, in the long run, it will provide strong benefits in environmental quality and efficiency while ultimately saving millions in pollution control and clean-up costs," he said.

Rory Schmick, a senior program manager at the [China-US Center for Sustainable Development](#), agreed that the outlay was worth it in the long term, and was vital because of the momentum of the economy.

"China is the leading edge of the developing world and will be pushing the envelope on every natural resource, energy and material commodity," he said.

"As we have learned to better document the external costs of traditional, linear industrial development, we are increasingly aware of the economic, environmental and social implications of bad industrial design decisions," he said, raising the specter of cities choked in smog.

"China, because of its rapid development, is suffering the most from bad resource-intensive western-style design models. And that is only the beginning: the cost of repairing the damage of past decisions is just now being tallied and we will soon start paying the tab."

The upshot could prove to be a downward spiral in living standards and an upward spiral in the cost of goods and services, Schmick said.

Mirroring Schmick and Nasr's views, Robert Watson, a senior scientist at the New York-based [Natural Resources Defense Council](#) (NRDC), said sustainable design was a financially sound approach to the supposed looming crisis.

"The bottom line of green is black," he said, reinforcing the case for upgrading the design of homes and offices. "Buildings are the worst things that humans do to the environment: they consume more energy, water and materials than anything else."

He recommended the adoption of cutting-edge sustainable design products such as efficient T-8 fluorescent lamps, high-performance low-emissivity windows, and thermal ice storage systems that can halve air-conditioning costs.

However economical, low-impact and hi-tech design may be, as the British scientist [James](#)

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[Lovelock](#) recently warned, humanity may already have edged past the point of no return.

Echoing Lovelock's fatalism, John Burnett, chair professor of building services engineering at [Hong Kong Polytechnic University](#), warned that the Earth might no longer be able to act as a sink for waste.

"Essentially it seems mankind has passed the point of 'environmental sustainability' upon which economic and social sustainability depends," Burnett said.

He added that, wherever they materialized, sustainable design initiatives often amounted to no more than a public relations front.

While stressing that they were taking care of the environment, politicians wound up prioritizing economic and social development, he said.

"This tends to mean business as usual, and only incremental improvements to products, processes, buildings and so on - that is, some relatively small reductions in resource use and environmental loadings."

He dismissed sustainable development initiatives across the industrialized world as trifling, and highlighted developed countries' ecological footprint -- the area of land and water required to support a defined economy or population at a specified standard of living indefinitely using prevailing technology. He rated the U.S. "footprint" as 12 to 15 times its headcount and Hong Kong's as six to nine times, while the world allowance is just two to three.



Then, in a statement that may well arouse as much astonishment as Qiu Baoxing's, he said, "As China and India emulate the developed countries, forget sustainability."

Notes

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