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Great walls of China

Massive new hospital just one of thousands to be built in next several years

The U.S. is pumping billions of economic stimulus dollars into infrastructure projects judged shovel-ready. In China, the shovels come first.

The Chinese government plans to build a massive new public hospital on the outskirts of the Shunde district of Foshan, a city

of 5.4 million that officials plan to merge with Guangzhou, a city of more than 10 million and the capital of Guangdong province, forming a metropolitan area dubbed GuangFo. Excavation has already started for the new First People's Hospital of Shunde, which is part of the nation's reportedly successful efforts to keep growing while much of the world wallows in recession.

"The construction process is different than here," says Raymond Pan, a design principal with Ontario, Calif.-based HMC Architects, which won an international competition to design the project. "We're still drawing, and we got a call saying the government would like to start digging in a couple of weeks," says Pan, the lead designer.

And while HMC was still working unusually fast to complete the design in accord with the original specifications, the government just recently told the firm that the plans would have to be redrawn with a third more square footage and half again as many beds. The project has an estimated \$175.6 million budget.

HMC announced late last summer that the firm was the winner of an international design competition, with China's Shunde Architectural Design Institute as a partner handling the construction documentation. The initial plans called for 1,500 beds and 2.2 million square feet. Then last December, Pan says, he learned the Chinese government wanted to add a couple of floors to the inpatient building, upping the bed count to 2,300 and the area to 2.8 million square feet.

In December 2008, several months before the U.S. passed the American Recovery and Reinvestment Act, the Chinese government said it would inject the equivalent of \$585 billion into its economy through 2010 in response to the worldwide financial crisis. About 1% of the funding was allotted for improving health and education—the government's announcements and news reports don't break it down in any greater detail—while nearly half will go toward railways, highways, airports and power grids.

The government has credited the spending with spurring the nation's gross domestic product to grow by 8.9% in the third quarter of 2009 and was expected to announce full-year growth exceeding 8%.

Also last year, the government announced it would spend \$124 billion in a three-year plan to overhaul its health system, largely aimed at pro-



HMC ARCHITECTS AND FRONTOP PHOTOS

The hospital planned for the Shunde district of Foshan, initially to house 1,500 beds in 2.2 million square feet of space, is now planned for 2,300 beds and 2.8 million square feet. The site for the future hospital is now mainly rice paddies and fish ponds.



viding basic health services to the many millions of its people living in rural areas. Researchers at Harvard University determined in a 2007 study that more than 80% of healthcare services in China are delivered in cities, although 70% of the population resides in rural areas.

Ambitious plans

The three-year plan calls for the construction of 2,000 county-level hospitals and 29,000 township hospitals as well as thousands of clinics. The government pledged that every village in the sprawling country—which has a population of more than 1.3 billion—will have at least one clinic.

If and when these aggressive goals are reached, China will lag far behind industrialized nations in healthcare spending. According to the World Health Organization, the Chinese government spent about \$38 per capita on healthcare in 2006 (the most recent data available), compared with \$3,076 in the U.S. Meanwhile, China is working to urbanize more of its rural population, and the new First People's Hospital of Shunde is about urbanization and economic development as much as healthcare.

Foshan is in what's known in China as the Pearl River Delta Economic Zone, which includes two special economic sectors near Foshan created in 1979 to attract foreign investment, sparking the spectacular rise of the manufacturing and port city of Shenzhen. A rail transit system under construction will connect Foshan with Guangzhou as part of a plan to integrate development and cultivate the entire area's growth into a global economic force.

That vision, meanwhile, stands in contrast to the current state of the site chosen for the hos-

pital, described by Pan as occupied by rice paddies and fish ponds.

"They will build the hospital first, and then the city will grow around the hospital," Pan says, describing a planning principle in stark contrast to the many parts of the U.S. in which healthcare organizations must prove that an established population needs a hospital in order to get permission to build one.

On the fast track

The hospital is scheduled to be completed by the end of 2011, which Pan says demands a construction timeline about half what it would be in the U.S. and requires that HMC complete its work in about five months, a quarter of the time to which the firm is accustomed.

The hospital will replace an aging, overcrowded 800-bed facility in the old part of the district, Pan says, and the design incorporates modern technology while conforming to the customs and needs of the population.

The layout reflects the reality that, in China, people don't communicate with physicians or hospitals before showing up, and they arrive by foot, bicycle and bus by the thousands each day first thing in the morning and after lunch, Pan says. The centerpiece of the hospital, therefore, is a giant atrium meant to accommodate as many as 4,000 people queued up to see a doctor.

The most striking feature in renderings of the hospital, a wood-colored wall along a walkway that wends through the buildings, likewise is intended to ease the flow of visitors through the campus.

"What I sold to them is the clarity of the dia-

gram, which is going to help the visitors find their way," including the many who will be illiterate, Pan says. The wall is to be made with terracotta, a traditional product of Shunde, which produced cookware long before the arrival of electronics and appliance factories.

Responding to the government's request that the hospital serve as a model of sustainable hospital construction, HMC designed the atrium—dubbed the "eco-atrium"—to be covered with photovoltaic sunscreens, generating some 330 megawatt hours per year. The terracotta wall is configured to block the western sunlight, keeping the atrium cool during the hot summer afternoons and warming the space at night by emitting the heat absorbed

during the day.

In another difference from modern hospitals built in the U.S., most of the beds will be in semiprivate rooms. Patients at public hospitals pay a nominal fee—though still out of reach for some—for basic services, and the hospital charges extra for perks such as private rooms. The plans for the Shunde hospital call for 300 "VIP" private rooms that have room for family members. Public hospitals rely on charging affluent patients for perks in order to cover costs.

The size of the new hospital, though huge by U.S. standards, is about average for a public hospital in a major Chinese city, Pan says. "In the U.S. we could never manage a hospital that size," Pan says. "In the U.S. over 1,000 beds is considered not manageable. Over there, with the massive population, they've been doing it for all this time, so they're used to it." <<



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