



Water, Wealth, Eco, Health...

SPEEDING TOWARD A NEW JIAXING

“There is an ecological apocalypse unfolding in China right now.”¹ The statistics bear the point.

BY HARRISON FRAKER



Top: Magnetic levitation train line opened in 2004.

Bottom: Faculty and students of CED, Berkeley and the College of Architecture and Urban Planning, Tongji University.

Of the world’s 10 most polluted cities, five are in China. A new coal power plant is built every 10 days. The effects on the economy, humans and nature are severe. Pollution and environmental damage have created losses ranging from 7 to 20 percent of the GDP over the last two decades. There are approximately 300,000 premature deaths each year attributed to air pollution alone. A quarter of China’s 1.3 billion people do not have access to clean drinking water. China has the world’s fastest growing auto market, giving it the notorious label of the world’s leader in vehicle fatalities and second in oil consumption behind the U.S. Currently the world’s second largest greenhouse gas emitter, China is on pace to surpass the U.S. in 2008 — some researchers even argue that it already has.

During the spring 2007 semester, students at Tongji University in Shanghai,

China and UC Berkeley took on this challenge, collaborating on a design studio in Jiaxing, China, a second-tier city 80 km outside of Shanghai. The group included undergraduate and graduate students pursuing coursework in architecture, landscape architecture, urban planning and urban design, as well as faculty and professionals from both countries.

The Gordon and Betty Moore Foundation, a private foundation based in San Francisco, provided a grant to the group to explore international urban sustainability. The Jiaxing City Government partnered with our group and posed a set of urban development research questions to the students. The charge was to develop a plan for the city in anticipation of a proposed high-speed rail line connecting the Shanghai Pudong International Airport to Hangzhou, with stops in Shanghai and Jiaxing. As an added challenge, Jiaxing’s station stop

1 Porritt, Jonathon. “China: The Most Important Story in the World.” *Green Futures*. September 2006: 3.

was proposed in an agricultural area 10 km away from the existing central city. This new rail line could connect Jiaxing to Shanghai in 15 minutes and to the airport in less than a half hour. What would this compression in time and space mean for Jiaxing?

The students identified two major challenges to address: China's environmental crisis and connecting the proposed rail station to the central city.

First, the students proposed a bus-rapid transit corridor between the

new station and the existing city center. They recognized the opportunity to create a new hub within the city, but wanted to maximize accessibility to the new station and the central city, to encourage investment in both anchors as well as in the corridor between them.

Second, they proposed an integrated sustainable design strategy for Jiaxing. Adopting the "3 Es" principles of ecology, economy and equity, they endeavored to improve Jiaxing's air and water quality, expand renewable energy sources and reduce waste, while maintaining a competitive economy.

Moreover, they sought to create an equitable design that would accommodate all types of people, regardless of age, income or other status.

The key to the students' design principles and guidelines was a whole systems approach which

- 1) put the landscape to work cleaning the water, generating food and biomass for energy,
- 2) reevaluating the architecture to be based on the best proclimate design principles and to be a framework for renewable energy systems like building integrated waste, solar photovoltaics and domestic hot water, and
- 3) establishing a set of urban design principles which structure an open space network around the existing system of canals.

The pattern creates site-specific, irregular blocks requiring a non-generic transformation of building types, while giving landscape priority for pedestrian and bike access to the transit system.

Despite the troubling statistics, there is opportunity to make real improvements in China's environment, if the government and citizens choose to take on the challenge. Through sustainable design and policy measures, China has the potential to emerge from environmental crisis as a leader. Jiaxing could serve as a model for sustainable development in China, providing its citizens a better life and a more environmentally sound, economically strong and equitable society. ^{FW}

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The urban design plan uses water, open space and a mobility system to create a unique block pattern and a high quality urban experience.