

WHICH WAY CHINA?

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Dongtan, the world's first Eco-City is leading the way in urban sustainability.

CHINA IS A CIVILISATION with a 5,000-year history of growing inventiveness and refinement. From 600 until 1500 AD, it was the world's most scientifically and technologically advanced society. It led the way in astronomy, mathematics, medicine, pottery and plant breeding. It invented the magnetic compass, gunpowder, cast iron, papermaking and printing. It alternated between being a closed, inward looking society, and a very open one that sought to link up with other civilisations.

China also built the largest and most spectacular cities before the modern era, with Beijing reaching some 2 million people as long ago as the 17th century AD. However, it also continued to be a land of villages and farmers. Under Mao this trend was strongly emphasised and China became a champion of village industries, collective farms and local self-sufficiency.

All that changed after Mao's death. In 1978 Deng Xiaoping launched China on the 'Open Door Policy', focusing on rapid economic growth, a new role for markets, investment from the West and foreign trade. The world has watched in fascination and trepidation ever since, as pictures of vast factories and gleaming skyscrapers hit our television screens. Twenty-five years ago there was hardly any foreign investment, but by 2003 it amounted to US\$680 billion. In a quarter of a century China's gross domestic product increased ten-fold, from US\$147 billion to over \$1.4 trillion. Its foreign trade grew more than forty-fold, from US\$20.5 billion to \$850 billion.

But whilst China's decision to industrialise and to urbanise has translated into a booming economy – with Western-style consumerism spreading across the country – it also generated major pollution problems: sulphur and nitrogen oxides have turned China's air into smog, and urban sewage, fertiliser run-off from farms and industrial chemicals are poisoning its rivers. There is also an increasingly global dimension: with one new coal-fired power station being built every week, and with China's car production now nudging up to that of Japan, its CO₂ emissions are catching up with

those of the US. However, China seems to be learning the lessons of the *limits to growth* a lot more quickly.

WHEN PRESIDENT HU Jintao took over in 2003, searching questions began to be asked about the trajectory of China's development. Since then a new policy emphasis on 'harmony between humanity and nature' and on 'building a conservation-oriented and environment-friendly society' has emerged. In recent speeches Chinese leaders have insisted that 'economic development must consider its impact on the environment and on society'.

There is growing evidence that these messages are increasingly informing the decisions of government officials and planners. One significant development is that the Shanghai Industrial Investment Corporation has commissioned the world's first purpose-built Eco-City – Dongtan. It will be built on Chongming Island in the Yangtze River Delta on an area the size of Manhattan Island – 86 km². By 2010 it will be a city of 25,000 people, by 2030 it will reach some 500,000 people. It is designed to be a beautiful and truly sustainable city with a minimal ecological footprint. The goal is to use Dongtan as a template for future urban design. As China is planning to build no less than 400 new cities in the next twenty years, Dongtan's success is of crucial importance.

I HAVE HAD the privilege to be working as a senior adviser on the Dongtan project with the London engineering company, Arup. The first phase of Dongtan Eco-City is conceived as a town consisting of three villages, each with its own distinct character. The city will then continue to grow as a collection of towns connected by cycle routes and public transport corridors, allowing inhabitants access to different parts of the city by tram, bus, bicycle, as well as on foot. The aim is to assure that people will take no more than seven minutes to walk from any part of the city to a bus or tram stop.

Dongtan's design is based on the principle that all its citizens can be in close contact with green open spaces, lakes and canals. Its buildings will be highly energy efficient, and the city will be largely powered by renewable energy – the wind, the sun and biomass.

Most of Dongtan's waste output will be recycled and composted. The bulk of its organic wastes will be returned to the local farmland to help assure its long-term fertility and its capacity to produce much of the city's food needs. Chongming's existing local farming and fishing communities will have significant new business opportunities at Dongtan, enhancing the island's long-term environmental sustainability at the same time.

Ironically Dongtan is being built on an island in the Yangtze Delta that is, in itself, a product of environmental catastrophe. In the last fifty years

Chongming Island has become the world's largest alluvial island, doubling in size, due to eroding soil from deforestation in the headwaters of Yangtze washing down the river. Chongming grew from the 600 sq km in 1950, to 1290 sq km today!

One reason for the decision to create a new city of minimal environmental impact on Chongming Island is the existence of a huge wetland area on the southern part of the island, a reserve for migrating birds, the largest of its kind in China. The wetlands will be a strong visitor attraction. Vegetation from the wetland reserve will also permeate Dongtan, assuring that it is part of the island's natural habitat, rather than a barrier to it.

WITH DONGTAN, A sustainable future is not some distant dream, but a vision that is actually being realised. The strategy for Dongtan Eco-City is for it to be developed in several stages in the next thirty to forty years. The first phase, to be completed by 2010, is a town of some 25,000. A tunnel and bridge, linking Chongming Island to Shanghai, is already under construction. In 2010 Shanghai will host the World Expo and Dongtan is intended to demonstrate that environmental sustainability and access to nature are very much part of new development in China.

Dongtan is a local project with a global perspective, designed to contribute to the emergence of a world of ecologically and economically sustainable human settlements. It is becoming clear that the planet won't be able to cope if 1.3 billion Chinese, plus 1.2 billion Indians do what only a few hundred million people have done so far: extract resources, consume and pollute. As high-population countries such as China and India catch up with Europe, North America, Japan and Australia, sustainable development is the only way to go.

Dongtan is meant to set an example. It will be a pioneering Eco-City that could become a template for sustainable urban development, in China itself and elsewhere in the world. It holds a promise of a high-efficiency, small-footprint urban design. By 2010 Dongtan will be a model for how to build sustainable cities worldwide that could be too compelling to ignore. •

***Dongtan, An Eco-City*, edited by Zhao Yan, Herbert Girardet, et al., was published by Arup and SIIC in February 2006.**

***Cities, People Planet – Liveable Cities for a Sustainable World*, by Herbert Girardet, was published by Wiley-Academy in 2004.**