Eco-cities in China: true environmental concern or a massive new wave of real estate investments?

Eco cities have a good ring about them. They create a feeling of going along with the modernity of urbanization, while at the same time doing something good for the environment. Citizens can participate in all the amenities and novelties of comfortable city life, while at the same time living in a nature-like context, reducing waste production, using less energy and then of a renewable type and they drink clean water from the tap, because sophisticated purification systems are in place. Transport systems are public, fast and good-looking, free internet is everywhere and the entire economy is service-driven and contains no dirty manufacturing. Last but not least, the economic growth is also high. One can have the cake and eat it too.

Small wonder that a great many cities around the world have expressed an interest in developing such state-of-the-art urban products, and have in fact begun planning and constructing them already. In the old developed world, cities such as Freiburg, Sevilla and Stockholm have earned great repute in establishing eco neighborhoods and low carbon districts; the results there tend to be generally positive from an environmental viewpoint, but their scale remains comparatively limited (hundreds or thousands of households or very small eco-industrial parks), and they don’t come cheap. Large scale transformation from scratch is difficult if not impossible, because massive urbanization and industrialization already occurred in the past and adjustments in the building stock can therefore only be incremental. Moreover, their administrative systems tend to be somewhat overly established and rigid not allowing for rapid changes in response to new urgent climate problem.

However, in the emerging countries of Asia, especially in the Far East, there appears to be a completely different reality. Economies are booming. Technological progress is rapidly absorbed in the social tissue with everybody doing all kinds of things on their mobile phone most of the time. Science and technology parks are burgeoning at the fringes of all modern cities. Environmental health issues are topping the policy charts because of air and water quality problems, and urbanization is massive and expected to continue for at least two decades. In short, the sky is the limit and everything seems possible in the continent of the future. This seems particularly true for the people’s Republic of China, from which I will be taking my examples in this contribution. Richard Register, who originally coined the concept of the eco city back in the early 1980s, exclaimed in the Scientific American in 2011 that China was really impressing him, because it was doing what the USA was failing to do: really build those eco cities of the future and not only talk and write about them. Even in the hundreds and formally endorsed and supported by its national government.

The truth is that the gap between what most eco city theorists, certainly those at its origin of a natural deep ecology life-style and those who remodel cities after eco systems, claim is necessary to make the eco city work as an environmentally sustainable entity and the way in which Asian local governments in general and Chinese cities in particular wish to see them evolve is radically different. Authors such as Richard Register and Peter
Newman propose what also looks like a ‘*retournons a la nature*’ approach with minimal hard surface, maximum greenery inside and outside buildings, maximum opportunities for creative visual experience, transport primarily through walking, bicycling and railways (for long distances), exclusive focus on renewables for energy provision and always collaborative interaction processes between governments and stakeholders. Although their account of the ideal eco city does not rule out technological solutions per se, it is obvious that their confidence that these will solve current sustainability problems is quite limited. It is a life-style issues that matter and urban morphology issues that can help facilitate this. It requires citizens that material wealth does not answer all their needs and that an economy of sufficiency and growth in immaterial well-being that brings true happiness.

This stands in stark contrast with what Asian city planners and policy-makers have in store for their citizens. Chinese citizens have only just begun to appreciate the joy of exuberant GDP growth, bigger houses, prettier cars and a clean space to live and work and high tech and high quality infrastructures to move around their data, goods and people with the speed of light. On a macro-scale, an Chinese eco city has much in common with a green-looking ultra-modern smart city, and in their policy practice the distinction between the two, eco city and smart city tends to fade.

In fact, on a micro-scale what Chinese citizens imagine their eco city to look like, if they have any conception of it, is much like in this picture.

A romantic couple is overlooking a clean park-like atmosphere, safe for their children to grow up in and play, far removed from the drudgery of harsh rural and agricultural life and the unhealthy fumes hanging around the rest of the industrial-production focused space elsewhere in the city. Modern life is supposed to be advanced, high-tech, sophisticated, comfortable, clean and green, and if all this goes by the name eco city, very fine!

To make the production of such Chinese-style eco cities possible, two main requirements have to be met: the first is Asian optimism about technological and economic progress and this being compatibility with environmental sustainability. And this is exactly what theories as those on ecological modernization and smart growth promise. By improving the eco-efficiency of economic production, emissions can be reduced while economic growth can be sustained if not enhanced. The second requirement is that international companies which have the disposal of state-of-the-art technologies, supported by their governments who mobilize them and help invest, come over to China to set up joint ventures with Chinese companies to realize these eco cities of the future.

The best known examples of Chinese cities that have engaged in this development are Suzhou, Tianjin and Guangzhou (they sought affiliation with the Singaporean government), Caofeidian and Wuxi (which collaborated with the Swedish government), Shanghai (which linked up with Britain), Qingdao (joint venture with Germany) and Beijing-Mentougou (where a Finnish planner-engineer had an important role to play). More recently, Denmark, the Netherlands, France and Italy also began to get involved with this emerging urban infrastructures business, but their projects are still in their early
phases. Our research group has played a key initiating role in getting what eventually came to be called Shenzhen International Low Carbon City on the map. The Shenzhen local government and the Longgang district government, where the area is located for which we were asked to write a strategic plan, attracted us as advisors in the years 2010-2012. We are still involved in regular events they organize, but now can analyze things more from a distance.

Our view was that in order to transform a low added value manufacturing industrial town into a world-class innovation hub with high value added R&D and services, quality would have to be pursued over growth in volume. An ‘open innovation hub’ was to be created which included national and international universities and research centers specialized in the fields of technology, engineering, creative industries and healthcare in which the area in question had a strong tradition. Apart from research organizations, large and start-up firms would have to locate there to elaborate on the knowledge created and turn it into high-value products and services. For such an area to thrive, high-level public facilities would be needed in education and health, as well as green buildings and the next generation infrastructures in energy, transport, ICT, waste disposal and water recycling, which we would be eminently qualified to provide, since we represented the TU-Delft based Next Generation Infrastructures foundation.

This combination package would be wrapped in a cultural envelope combining the traditional with the modern. On the one hand, we wished to pay due attention to local traditions and proposing to infuse elements of local Hakka-culture by renovating existing Hakka villages into tourist attractions and having new buildings be inspired by traditional (round) Hakka building styles and a special museum and trail route devoted to their history and heritage. On the other hand, modernity for the Young Urban Professional would come with a focus on official bilingualism in schools and other public places, to attract talented cosmopolitan Chinese interested in the best future for their children as well as adventurous foreigners for whom exclusive communication solely in Mandarin would be a bridge too far.

What has become of the projects, plans and ideas thus far? In our own case, the Shenzhen Sino-Dutch eco-zone which was eventually relabeled International Low Carbon City is under development. As proposed, a large exhibition hall built from sustainable materials was constructed where the annual Low Carbon Economy conference in Shenzhen is held. As proposed, the nearby river was cleaned up making the area more attractive, and as proposed a nearby Hakka village is under renovation. The future hinges the willingness of investors and significant companies to settle in the area and develop it in conformity with the clean and green tech direction local government wants. If so, the high-level infrastructures will appear that can truly propel Shenzhen outskirts into the 21st century. The Chinese eco city will be an affordable smart city or it will not be.

The involvement of Dutch players has been far more limited than hoped on either side. The Chinese had hoped for significant investments from the Dutch government and Dutch companies, which did not come forth. The Dutch had hoped for lucrative jobs or attractive business offers to sell their knowledge, which ended up in Chinese hands: less
sophisticated, but more affordable. And at least as importantly, physically present to strike whenever business opportunities emerged. The records for other Sino-foreign eco cities have not been that different. Some do appear as large-scale urban development projects, such as those of which Singaporean parties participate. They become economic successes, but in spite of elaborate eco city indicator systems their social and environmental merits are disputed. Others, such as those in which Swedish and German partners are involved are drastically downsized for lack of profitable investment opportunities, some have been aborted such as British-facilitated Dongtan and some have been redirected in ways that the original brains deemed seriously ecologically unfriendly, such as Finnish-inspired Beijing-Mentougou.

Successful or not, in all cases, eco city development, cloaked under whatever name, green city, low carbon city, sustainable city, knowledge city or intelligent city, has amounted to much the same as actual smart city development. This implies a strong focus on technology and infrastructure development, a drive to generate high GDP growth and a tendency to cut costs along the way of construction even at the expense of quality. Generally speaking, Chinese policy-makers tend use the various names shown in this figure interchangeably. For instance, they distinguish eco cities, low carbon cities, and low carbon eco cities, all promoted by different national ministries but targeting much the same thing. Recently, smart cities were also introduced as a new concepts for local governments to follow.

Our research into the meaning of these city categories shows, however, that these categories do not have the same theoretical baggage: while the sustainable city tends to be an umbrella concept, and the eco city is clearly more orientated towards the environmental sciences and sustainable living, the low carbon city has a narrower focus on carbon emission reduction. The smart city and its satellites digital city, intelligent city and information city clearly drift away from the environmental focus, but resonates well with the large construction and engineering firms. Their growing popularity in academia and policy-making may therefore appear ominous to environmentalist. Why not turn more and land from natural or agricultural to urbanized, from green to grey? There is still so much land left to ‘developed’. Anybody who has travelled by High Speed Train from metropolis to metropolis in China knows the amazing impact of this ‘development’.

Could it mean that in spite of all overwhelming evidence of ecological disaster, it is still only money that talks? Could it be that eco cities are simply the palatable name for the latest wave of massive construction projects around the country that traditional large state owned enterprises need for their survival? Only more detailed research into how eco cities and smart cities are actually implemented can tell.