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GREEN RETIREMENT HOMES IN CHINA

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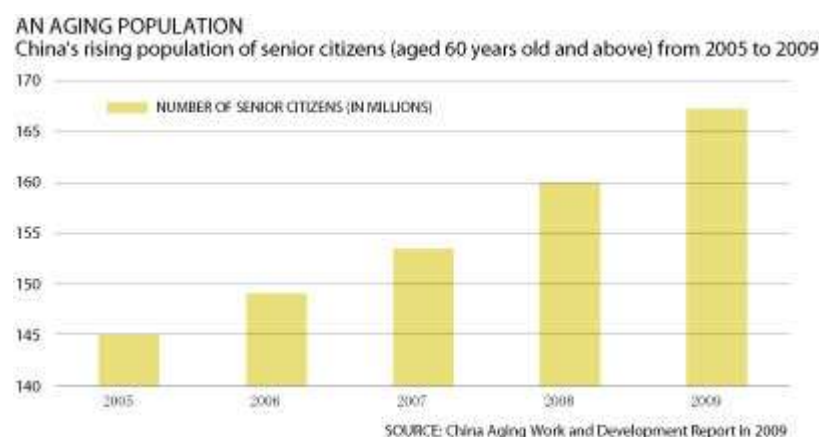
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Green retirement homes in China

Andreas Oberheitmann⁺ and Ruan Xiaodong⁺⁺

China adopted a one-child policy in 1979 in order to stem population growth and ensure economic stability. This policy prohibits couples from China's ethnic majority from having more than one child. The policy did slow population growth, increasing access to vaccinations and to improved disease care and treatment. However, with fewer children and improved living standards, the proportion of elderly in China's population has grown substantially over the last 20 years while the number of young adults is shrinking. The 2010 census in China shows that people over 60 years of age account for 13.26 percent of the populace, compared to 10.33 percent in 2000. By 2040, this figure is projected to spike to a stunning 28 percent. A 2010 study by the Chinese Academy of Social Sciences (CASS) forecast that by 2030, the proportion of the population that is over 65 will exceed even that of Japan, which has the grayest population in Asia. "By 2050, Chinese society will enter into a phase of severe agedness," the CASS said (LAM, 2011).

Figure 1:
Population development in China

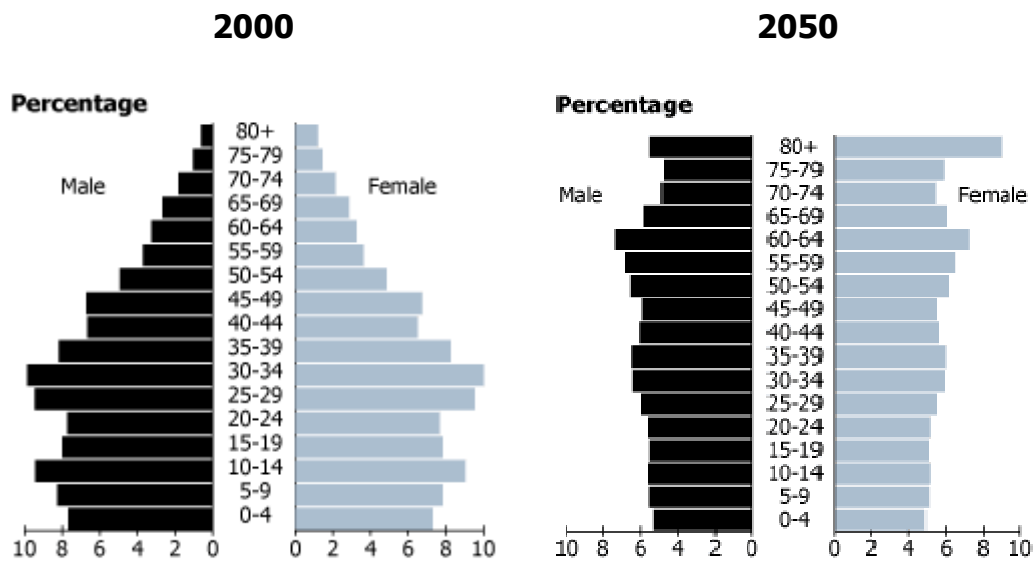


Source: Fang (2010).

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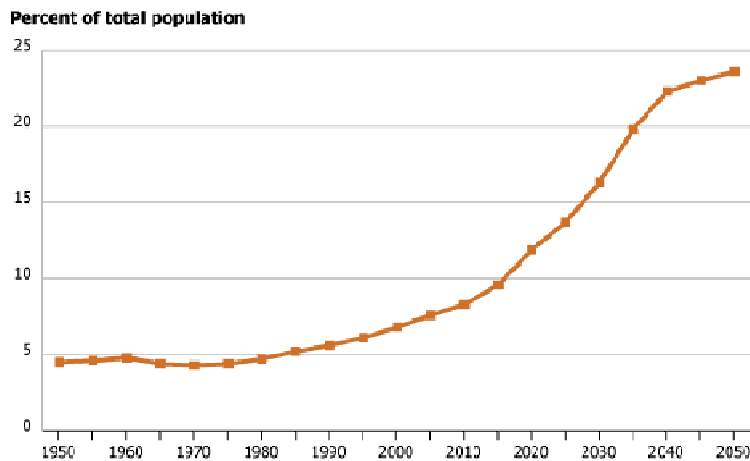
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Figure 2:
Population Pyramids, China: 2000 and 2050



Source: WORLD POPULATION PROSPECTS (2005).

Figure 3:
World population prospects: 2000 and 2050



Source: WORLD POPULATION PROSPECTS (2005).

For the last 2,500 years, adult children in China have followed the Confucian doctrine of filial piety and provided physical care for their aging parents at home. Since the establishment of the People’s Republic of China in 1949, the government has required by law that all adult children take care of their aging parents; only childless elders are cared for in welfare institutions by the public sector or the government. With the geographic mobility change and the family size reduce gradually, the elder care has become a big issue to the whole society. In 2005, The Chinese government has pledged about 1.5 percent of its total gross domestic product to health care over the next few years, and to provide basic health insurance to rural

communities. In 2007, the New Cooperative Medical Scheme (NCMS) covered 86 percent of rural residents. China has also pledged to build a primary care system that would provide greater care in community centers and in homes.

However, the Retirement homes provided by the government are far less compared the tremendous need. In March 2011, a major theme of the 12th Five-Year Plan on Economic and Social Development was released in boosting social-welfare benefits, including those for senior citizens. And the retirement homes industry is booming in China as a rapid increase in the proportion of its elderly population forces a nationwide shift from traditional family care to institutional care. It is undoubtful that more and more senior citizens, city or rural residents, will choose the retirement homes to be taken care of post-retirement needs, not rely on the traditional way that their children and grandchildren take care of them. For instance, elder care institutions have grown rapidly in the big cities like Beijing, Tianjin, Shanghai and Nanjing. As more facilities have opened, more families have begun seeking institutional care as an option for elder care. Among the elder care institutions, the green retire homes has attracted more and more senior citizens for the “green” features that are healthier for residents and easier on nature.

The concept of Green retirement homes was first emerged in the western countries with the idea of low carbon economy was put forward in recent years. The transition to a low carbon economy creates many opportunities for the construction industry, and the buildings sector in particular. However, the Green retirement homes has some special characters for the target people are the senior citizens. So, some special facilities are need to be constructed to satisfy the wants and needs of the frail elderly residents. Besides, the environmental quality are needed to keep quiet and green, some personalized service will be available to make the total service is more humane.

The “green” features of the retirement homes lie in a better energy performance than the standard alternative/energy efficiency requirements in building codes. In China, the green retirement homes typically use high levels of insulation, energy efficient windows, low levels of air infiltration and heat recovery ventilation to lower heating and cooling energy. They may also use passive solar building design techniques or active solar technologies. These homes may also use hot water heat recycling technologies to recover heat from showers and dishwashers. Besides, the geothermal, rainwater harvesting, green building materials and intelligent control system, etc., are different from ordinary retirement homes.

The benefits of the green retirement homes are substantial, it can promote the energy, water, land, materials and environmental management in the building technological progress, increase home efficiency standards by up to 40%. It also promises to lower utility and home maintenance costs and improve the long-term durability of your home. So within the background of low-carbon economy taken by China, including emissions reductions, improvements in energy efficiency, adjustments in the energy infrastructure and launching carbon capture projects, the projects of green retirement homes are encouraged by the government and the society. Now the green home building is becoming a fast-growing

commodity amongst retirees, although finding a builder certified in green building practices is still a precious feat.

The aspects of low carbon characters to the Green retirement homes are as follows:

- Lighting- Energy-efficient lighting, with maximum use of sunlight; Solatube skylights in second floor apartments; motion controlled lighting in common areas;
- Building shell (insulation, windows)-Tighter thermal envelope with eco-friendly insulation for consistent climate control and maximum comfort all year long;
- Reclaimed materials from previous residence donated to Habitat for Humanity ReStore Fifty percent of construction waste recycled;
- Low-toxicity paint and high efficiency air filtration for better indoor air quality;
- Energy saving electric Appliances (refrigeration; washing; cooking; Office Equipment; Lift and elevators; Air-conditioning and Ventilation; Heat pumps)
- Water-saving plumbing systems, including on demand gas-fired water heaters, reducing overall water use by 30 percent;
- Other fuels: Renewable Energies (solar, biomass, etc.)
- Heating, water heating and steam (boilers);
- •Passive cooling, heating and natural ventilation;

The challenges of population aging are daunting for any country, but especially so for China. Unlike developed countries where economic development preceded population aging, China faces the massive demands of population aging at one of the fastest rates ever and while its economy is still not fully developed—hence, without the funds necessary to address the demands. China's dilemma is how to allocate resources among competing needs of various sectors while still continuing its economic growth.

The Green retirement homes is the eco-friendly home suitable for the living of senior citizens and having the following criteria like resource efficiency, energy efficiency, indoor environmental quality, operation maintenance and homeowner education etc. Though the idea of Green retirement homes has emerged for several years, some communities with the sign of “Green retirement homes” have been constructed and some are in operation. For example, Yangtaishan Nursing Home, a nursing home established eight year ago, has been honored as the "Exemplary Green Organization of Beijing" in 2011 for the environmentally-friendly system in heating, electric supply and sewage treatment. Yangtaishan Nursing Home is located among forest parks in northwestern Beijing. With support from the local government and private sectors, a solar collector of more than 1,400 square meters was installed in 2007, and its own sewage treatment system was built in 2005. Thanks to the sewage treatment system, more than 1,400 tons of tap water is saved annually. Now the Yangtaishan Nursing Home is famous for the “green” environment-- clean air, pure water and a 90% vegetation coverage rate.

In 2011, the third Joint Forum of Green retirement homes in China was held in Sanya, Hainan. On the forum, the assessment system, the business models and value engineering of green retirement homes was detailed analyzed. Some typical project cases were analyzed in-depth also. The strategies to avoid the risk of investment and to sort out the wrong concepts of green retirement homes were made by the relating settlements, investors, developers, managers, operators together.

China now is becoming an aged society. With the change of society and the family structure and the development of economy, especially the low carbon economy, more elderly people will choose social institutions to spend their retired life. The needs of green retirement homes will also increase for the green design is in accordance with the trend of elderly care in China. China will see more Green retirement homes and communities with new design developed and appeared in the future.

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