

Key Facts

- Construction of the city is due to begin in 2008. The first phase of Dongtan to be developed will be the South Village which contains part of the marina and includes nearly a square kilometer of open space and parkland – we anticipate it will include 2,500 to 3,000 dwellings.
- Compared to a 'business as usual' development model, Dongtan eco-city aims to have:
 - 60% smaller ecological footprint
 - 66% reduction in energy demand
 - 40% energy from bio-energy
 - 100% renewable energy for in-use buildings & on-site transport
 - Waste to landfill down by 83%
 - Almost no carbon emissions
- The Dongtan site is at the south-east tip of Chongming Island and is 86 square kilometers (8,600 hectares):
 - By 2010 the one square kilometer (100 hectares) first phase will be developed, to accommodate up to 5,000 people
 - By 2020 the 6.5 square kilometer (650 hectares) start-up area will be developed, to accommodate up to 80,000 people
 - In future development up to 2050 we hope to accommodate up to 500,000 people on around 30 square kilometers (3 000 hectares)
- The first phase to be developed will be the South Village which contains part of the marina and includes nearly a square kilometer of open space and parkland – we anticipate it will include around 2,500 to 3,000 dwellings.
- Chongming Island is 1,200 square kilometers (120,000 hectares) and the largest alluvial island in the world (formed by sedimentary deposits washing down the Yangtze River).
- As part of their long term development plan for Chongming Island, the Shanghai Municipal Government is constructing a bridge and tunnel to link the Island with the Shanghai mainland. It will be complete in 2009.

Ecological Management of Wetlands:

- The delicate nature of the Dongtan wetlands and the adjacent Ramsar site (www.ramsar.org) for migrating birds and wildlife, has been one of the driving factors of the city's design.
- We plan to enhance the existing wetlands by returning agricultural land to a wetland state to creating a 'buffer-zone' between the city and the mudflats - at its narrowest point, this 'buffer-zone' will be 3.5 kilometres wide.
- Only around 40% of the land area of the Dongtan site will be dedicated to urban areas and the city's design aims to prevent pollutants (light, sound, emissions and water discharges) reaching the adjacent wetland areas.

Sustainability:

- To be truly sustainable, the city must not only be environmentally sustainable, but socially, economically and culturally sustainable, too.
- A combination of traditional and innovative building technologies will reduce energy requirements of buildings by around 66%, saving 350,000 tonnes of CO2 per year for the start-up area.
- All housing will be within seven minutes walk of public transport and easy access to social infrastructure such as hospitals, schools and work.
- Although some may choose to commute to Shanghai for work, there will be employment for the majority of people who live in Dongtan across all social and economic demographics – our hope is that within time and by effective policy incentives, companies will be attracted to Dongtan and people will choose to live and work in the city.
- Dongtan will produce sufficient electricity and heat for its own use, entirely from renewable sources. Within the city, there will be practically no emissions from vehicles – vehicles will be battery or fuel-cell powered.
- Farmland within the Dongtan site will use organic farming methods to grow food for the inhabitants of the city, where nutrients and soil conditioning will be used together with processed city waste.
- The development of techniques that increase the organic production of vegetable crops will mean that no more farmland will be required than is available within the boundaries of the site.

For more information on Dongtan please visit www.arup.com or contact Beth Hurran at the Arup Press Office:

Tel: +44 (0)20 7755 5403 | Mob: +44 (0)7920 570 430 | Email: beth.hurran@arup.com

Energy:

- Energy demand in Dongtan will be substantially lower than comparable conventional new cities. When it is completed, the energy used within the city will not add to the level of greenhouse gases in the atmosphere. Energy in the form of electricity, heat and fuel will be provided entirely by renewable means.
- In buildings, this will be achieved by specifying high thermal performance and using energy efficient equipment and mechanisms to encourage building users to save energy.
- Transport energy demand will be reduced by eliminating the need for a high proportion of motorized journeys, and judicious choice of energy-efficient vehicles.
- Energy supply will be via a local grid and electricity and heat supplied by:
 - A combined heat and power (CHP) plant that runs on biomass in the form of rice husks, which are the waste product of local rice mills
 - A wind farm
 - Biogas extracted from the treatment of municipal solid waste and sewage
 - Electricity will also be generated within buildings using photovoltaic cells and micro wind turbines
- Some of the electricity generated will be used to charge the batteries of electrically-power vehicles or to produce hydrogen for vehicle fuel cells.
- A key feature of energy management in Dongtan will be the level of information provided to consumers to encourage them to conserve energy by means such as smart metering and financial incentives. A visitors' centre located close to the energy centre will explain how cities can be sustainable in energy terms.

Resource and Waste Management:

- We aim to collect 100% of all waste within the city and to recover up to 90% of collected waste.
- Waste is considered to be a resource and most of the city's waste will be recycled and organic waste will be used as biomass for energy production.
- There will be no landfill in the city and human sewage will be processed for energy recovery, irrigation and composting.

Buildings:

- Where possible, labour and materials will be sourced locally to reduce transport and embodied energy costs associated with construction.
- A combination of traditional and innovative building technologies will reduce energy requirements of buildings by up to 70%.
- Public transport with reduced air and noise pollution will enable buildings to be naturally ventilated, and in turn reduce the demand on energy.
- Buildings with green roofs will improve insulation and water filtration and provide potential storage for irrigation or waste disposal.
- A compact city (made of three villages) reduces infrastructure costs as well as improving amenity and energy efficiency to public transport systems.

Transport:

- Dongtan will be a city linked by a combination of cycle-paths, pedestrian routes and varied modes of public transport, including buses and water taxis.
- Improved accessibility in Dongtan will reduce travel distances by 1.9 million kilometers, reducing CO2 emissions by 400,000 tonnes per year.
- Canals, lakes and marinas will permeate the city, providing a variety of recreation and transport opportunities.
- Public transport will use innovative technologies, which may include solar powered water taxis or hydrogen fuel-cell buses.
- Visitors will park their cars outside the city and use public transport within the city.
- Public transport with reduced air and noise pollution will enable buildings to be naturally ventilated, and in turn reduce the demand on energy.