

Sustainable City Development

The Sweco Approach

The Sustainable City is a Swedish initiative with a holistic concept for a sustainable development of cities and communities.



Sustainable Urbanization – the need for decisive action

the concept

The Sustainable City concept was developed by Sweco for the 2002 World Summit of Sustainable Development in Johannesburg on behalf of the Swedish Government through the Ministry for Foreign Affairs, the Ministry of the Environment and the Swedish environmental technology industry by way of the Swedish Trade Council. The overall objective was to promote a sustainable development of cities – in economic, social, ecological and spatial dimensions.

working method and toolbox

The Sweco concept consists of a working method for sustainability reviews based on open, creative and constructive communication and cooperation between decision-makers, experts and the public. Important steps include diagnosis of the current situation, specification of key issues and objectives, impact analyses and selection of strategies. A number of tools are utilised to facilitate this process, such as SWOT-analysis, scenario-techniques, back casting and SEA.

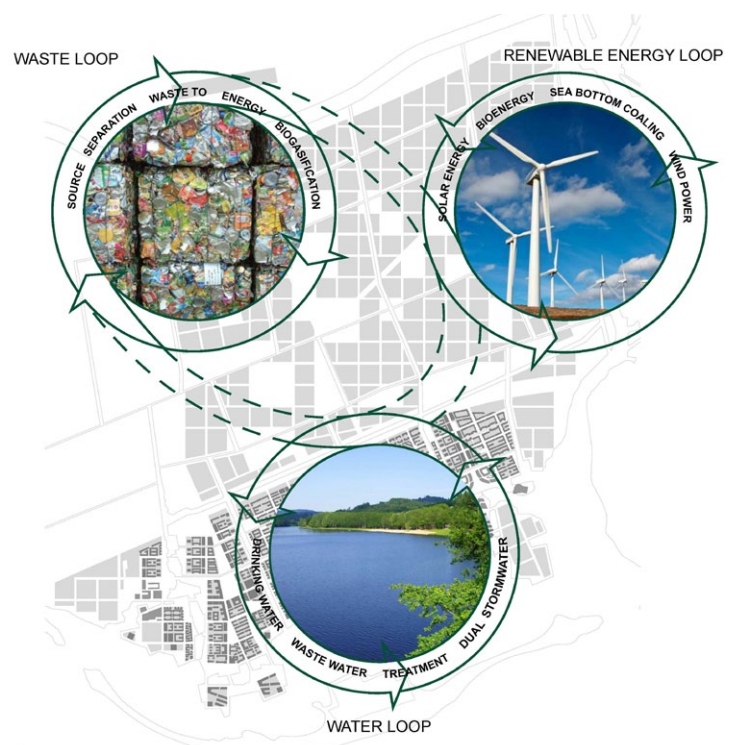
eco-cycle model

In a Sustainable City, the use of renewable resources is emphasized, resource consumption is minimized and resources are managed in a way that maximizes recovery and reuse.

New system solutions provide scope for synergies between sewage, waste and energy production and enable coordination with efficient land use, landscape planning and transport systems. This is illustrated by the eco-cycle model which is essential for a definitive shift from linear to circular resource flows.

new and existing urban areas

The concept is applicable in planning of new cities and towns where there is a “window of opportunity” to reduce energy demand by up to 75% and achieve an energy supply based on renewables. In addition, the concept can be used to develop strategies for successive realignment of existing urban areas in a sustainable direction.



examples

- Caofeidian International Deep Green EcoCity, China
- Cork South Docklands Master Plan, Ireland
- Tianjin Gangdong Conceptual Master Plan, China
- Hohhot and Wuhai Green City Projects, Inner Mongolia, China
- the Baltic Pearl Project, Russia
- the Dongli Lake Project, China
- Qingdao Olympic Sailing Arena Competition, China
- the Toronto Waterfront Revitalization Project, Canada
- Luodian Town in Shanghai, China
- Buffalo City, South Africa
- Hammarby Sjöstad, Sweden



Caofeidian International Deep Green EcoCity

A new ecological city in the Tangshan region 250 kilometres East of Beijing. About 1-1.5 million people are expected to live in the city in a long term perspective.

The new EcoCity will have an area of 150 square kilometres with a first development phase of 30 square kilometres. A major deep harbour and an industrial area is also planned in connection to the city. The goal of the project is to build a both climate neutral and attractive city, mainly based on a combination and adaptation of Swedish innovative examples on different planning levels. Sweco is also designing a Sustainability Centre (cover image) including exhibitions of sustainable development ideas and city development, training, facilities, R&D and interactive demonstration

equipment for environmental technology.

The EcoCity has a compact and varied mixed-use structure. Different city structures are interwoven to create an inspiring whole. The urban nodes serve as centres for the city-districts and should be given distinct urban profiles such as innovation, trade, science and sports. The structure supports the development of sustainable transportation modes with priority for walking, bicycling and public transportation. The green and blue structure is an integral part of the public space.

Client: Administrative Committee of Tangshan Caofeidian Industry Zone.

Swedish Pavilion for Expo 2010

The Swedish pavilion is designed by Sweco and expresses the Swedish sustainable approach to innovation. The theme of rural and urban interaction has also been an important concept for the design. The exhibition displays the Swedish contribution to the world expo and the theme of better city, better life and visualizes the essence and theme "Spirit of Innovation". The 3,000 square metre pavilion contains a 1,500 square metre exhibition hall and equal size of / conference facilities, administration office, coffee shop, boutique, kitchen and back of house functions.

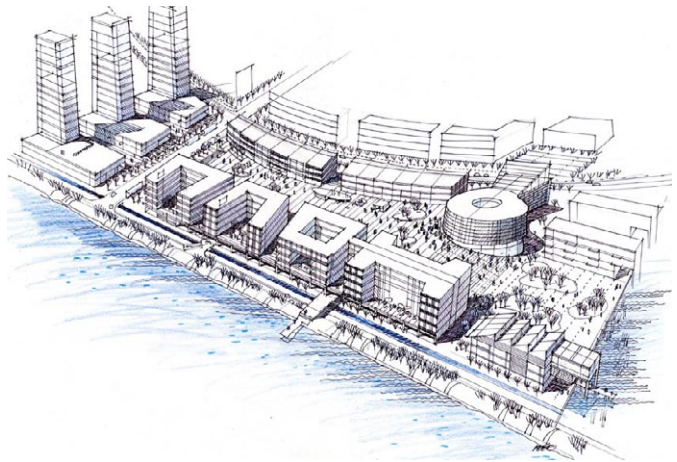
Client: The Swedish Committee for Expo 2010.



Dongli Lake Project

Outside Tianjin, the ancient port city and gateway to Beijing, a new town for 100,000 residents will be built. The ambition was to create a town with a clear ecological profile and with a high level of environmental consideration. The area is 680 acres and is situated in an ecologically interesting region about 150 kilometres from Beijing. The closest city is Tianjin. The landscape is a flat delta area previously used for farming and fish breeding. The planning concept, in short, can be seen as an integration of ecology and new urbanism.

Client: China Vanke Co Ltd.



Luodian Town, Shanghai

Luodian New Town is a new city for 30,000 residents outside Shanghai. The layout has been inspired by Scandinavian architecture, landscape and urban planning traditions. Sweco has been involved in the project for several years, in everything from general strategic planning to the design of individual buildings and squares. The city centre was inaugurated in June 2004 and since then three new town districts have been built.

Client: The City of Shanghai and Shanghai Real Estate Ltd.

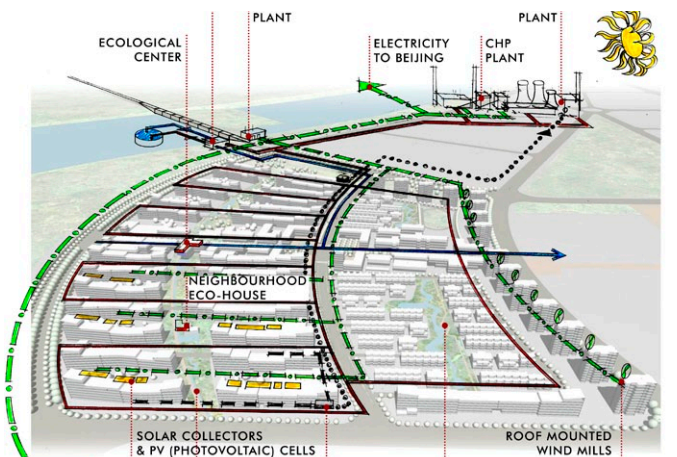


Hohhot and Wuhai Green Cities

Two joint research projects for sustainable cities in the autonomous republic of Inner Mongolia in China. Hohhot is the capital city of Inner Mongolia with a population of 2,130,000. In the first phase, the planned Green City will have a population of 20,000.

Wuhai is a small prefecture-level city and regional center with a population of 450,000 people. In the first phase, the planned Green City will have a population of 8,000.

Client: The Swedish Ministry of Foreign Affairs and The Swedish Trade Council.



Cork South Docklands Master Plan

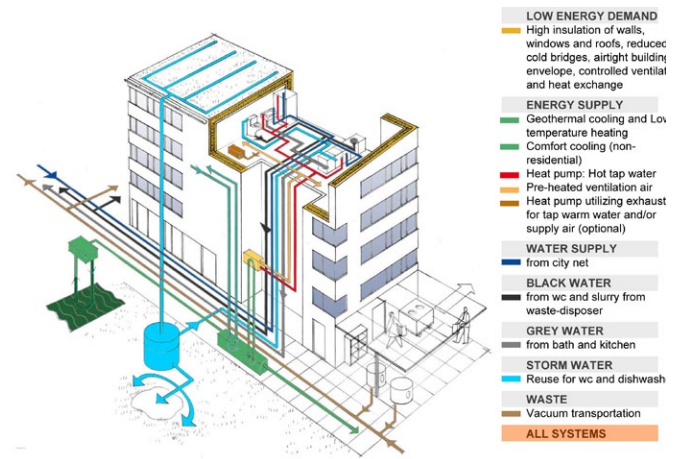
Sustainability analysis of the initial masterplan – to assist in preparation of a comprehensive sustainability master plan for the South Docklands.

The project includes:

- Masterplan, Targets and Funding
- Energy Production
- Waste Management
- Water and Wastewater
- Individual Building Sustainability

An eco-cycle model has been developed on building level, town district level and city level.

Client: Howards Holdings Ltd.



The Baltic Pearl Project

Sweco's competition proposal for the EUR 1.3 billion investment in Sankt Petersburg, Russia, reflects a dedicated commitment to sustainable development in ecological, social and economic dimensions. The ecocycle model is reflected in the city's structure, as well as the landscape and building architecture, and is clearly readable in the design. The city has integrated eco-cycle systems for water, waste and energy, such as making use of sewage sludge and solid waste; utilising surplus energy from nearby industries for energy production; and, not least, by creating a public transport system attractive enough to reduce automobile dependency.

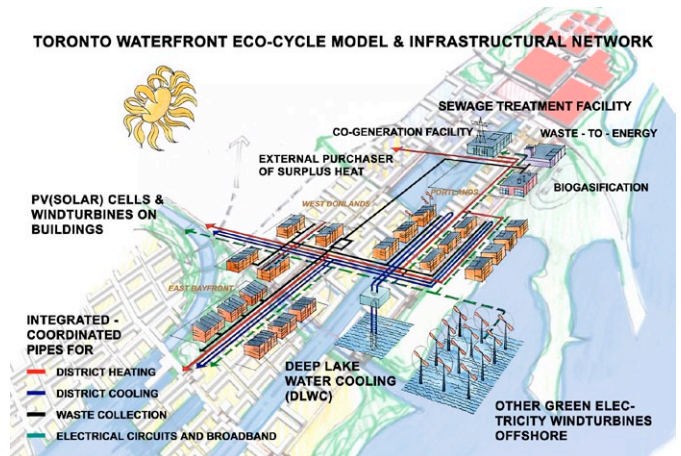
Client: Shanghai Overseas United Investment Co Ltd ZAO Baltic Pearl.



Toronto Waterfront Revitalization Project

The TWRC is one of the greatest urban development programmes in the world. The project embraces housing and service facilities for 70,000 people as well as places of work for 30,000 people. The area to be built lies along the Lake Ontario and the project is estimated to run for 20 years. A Swedish expert team went to Toronto to present the Swedish way to build cities for a sustainable society and to market Swedish know-how in environmental technology.

Client: TWRC (Toronto Waterfront Revitalization Corp.).



Hammarby Sjöstad, Sweden

Hammarby Sjöstad, the "sea city" in Stockholm, is an environmental project out of the ordinary – a high class city district planned for a population of 20,000 and an awarded environmental urban planning project. Sweco participated in the planning process as well as in a number of projects in building and landscape design; structural engineering; water and sewage systems; waste handling systems; land decontamination; geotechnics; and traffic planning.

Hammarby Sjöstad is the starting point for the Sustainable City Concept and an inspiration for the following projects.

Client: City of Stockholm and real estate developers.



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Sweco is a leading provider of consulting services in the fields of urban planning, architecture, engineering, and environmental technology. The Sweco group includes some 5,000 employees and is a leader in several segments of the Nordic and European market.

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