

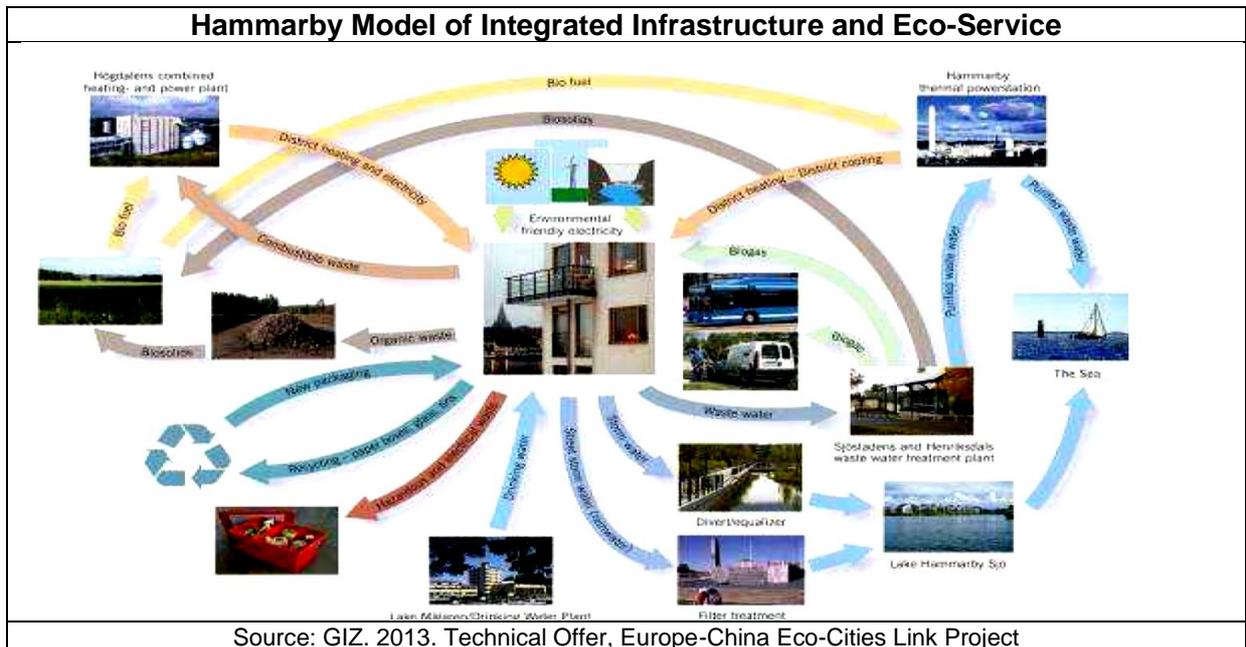
Case Study 6

Sweden → Stockholm Eco-District of Hammarby

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Case 6 Sweden → Stockholm Eco-District of Hammarby

Problem to resolve: Global warming through CO2 emissions

Means: Integrated development: The Hammarby model is a unique eco-cycle system that integrates energy, solid waste, water and wastewater for homes, offices and other activities in the area. Seen as a blueprint for city systems of the future, the cycle also includes all storm water, rainwater and meltwater



Secondary Tools: Rating of energy supply (district heating based on renewable energies), water and (decentralised) waste water treatment, waste management, social mix,

Description:

Since 1995, the city of Stockholm has developed Hammarby Sjöstad (Hammarby Lake City), built on a previous industrial site at a harbor area which has been cleaned up, developed and converted into a modern and eco-friendly district. Hammarby Sjöstad is Stockholm's largest urban development project with its own environmental programme incorporating energy supply, water and wastewater treatment and waste management. Hammarby is meant to provide 10,000 apartments for 35,000 inhabitants and it occupies 200 ha of land in Southern Stockholm. Hammarby was developed to support Stockholm's bid for hosting the 2004 Olympic Games. Mixed forms of tenure apply throughout the district, with a 45%-55% split between tenancy and tenant ownership. Hammarby is a well-planned area with its own recycling model and local sewerage treatment plant. Energy is being produced in the district heating plant, based on renewable fuels. Combustible waste is burnt to generate heat. The integrated model for energy, waste management, water management is now known as the "Hammarby model". Sweden's environmental code came into effect in 1999, and demands the integration of environmental concerns in all public planning activities. Today, the development of Hammarby is almost complete.

Environmental targets and the Hammarby model.

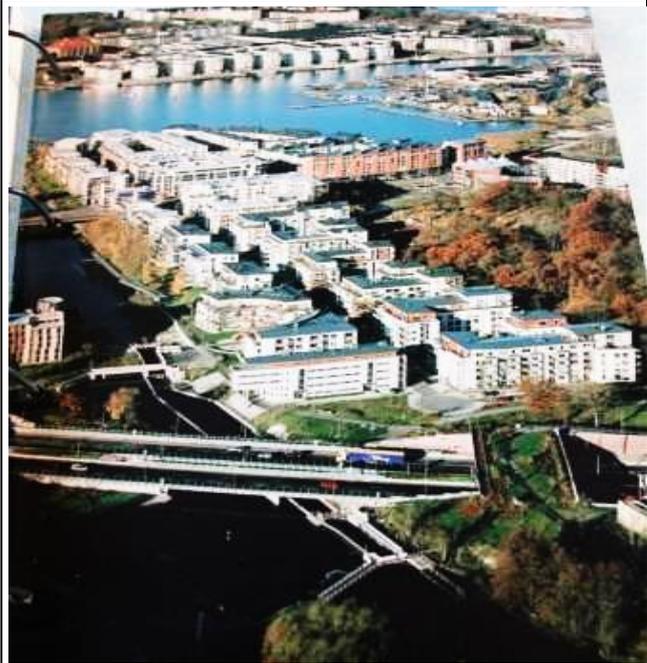
The city council aimed to make this district two times more sustainable than other best practices of energy-efficiency in Sweden, which normally is 200kWh/m². Other cutting edge practices produce an average annual energy use of 120kWh/m², while Hammarby's target is 100kWh/m². Other environmental targets include water conservation, waste reduction, reduced hazardous materials in construction, use of renewable energy sources, and integrated transport solutions. Representatives from different key departments of the city administration were concentrated into a project team to synergize all sectors (planning, energy, waste management, real estate, traffic, water and sewerage). Jointly they developed the "Hammarby model". The Hammarby model is a unique eco-cycle system that integrates energy, solid waste, water and wastewater for homes, offices and other activities in the area. Seen as a blueprint for city systems of the future, the cycle also includes all storm water, rainwater and meltwater.

Hammarby Sjöstad: scale model

Hammarby Sjöstad: view from the air



<https://www.thenatureofcities.com/2014/02/12/hammarby-sjostad-a-new-generation-of-sustainable-urban-eco-districts/>



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The following accomplishments are being reported:

Land use. Industrial brownfields have been redeveloped into attractive residential areas, with parks and green spaces. This fulfilled the city’s intention to develop the city without opening up virgin land through greenfield development, in accordance with the 1999 Stockholm City Plan.

Building materials. Healthy, dry and environmentally sound materials utilized. These have been selected according to their ecological characteristics. No harmful materials allowed. All materials used - inside and outside the buildings - were carefully selected based on environmental considerations. The philosophy is to use proven, sustainable materials and products with environmental declarations, and to avoid chemical products or building materials containing hazardous substances.

Water. Reduction water consumption per person by 60% has been achieved.

Hammarby Sjöstad: Energy-efficient Buildings



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Hammarby Sjöstad: Energy-efficient Buildings



<http://en.white.se/projects/hammarby-sjostad/>

Evaluation. Initial findings of the first cycle of development indicate a 30% of reduction in non-renewable

energy (NRE) use, a 41% reduction in water use, a 29% reduction in global warming potential (GWP), a 41 % reduction in photochemical ozone creation production (POCP), and 36% reduction in acidification potential (AP), a 68% reduction in eutrophication potential (EP), and a 33% reduction in radioactive waste (RW).

