

Converting an oil terminal into municipal housing: land use planning in Stockholm - SE

1. Policy Objective & Theme

- ADAPTATION TO RISK: Integrating coherent strategies covering the risk-dimension (prevention to response) into planning and investment
- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space
- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment
- SUSTAINABLE ECONOMIC GROWTH: Improving competitiveness

2. Key Approaches

- Integration
- Ecosystems based approach
- Technical

3. Experiences that can be exchanged

Innovative urban planning for the longer term future taking into consideration expected changes in the climate.

4. Overview of the case

The new city district, Stockholm Royal Seaport, is currently being built in Stockholm's harbour area to meet future climate change demands. Due for completion in 2025, it will be a showcase for sustainable urban design where innovative environmental technologies and creative solutions are being developed, used and presented. On completion, Stockholm Royal Seaport will have replaced an existing oil terminal and be home to some new 10,000 apartments and 30,000 work places.

5. Context and Objectives

a) Context

Stockholm is built on the waterfront on one of 14 islands of the Stockholm archipelago. The increased demand for oil caused by industrialisation resulted in the construction of the oil port at Loudden in 1926, the biggest oil terminal in the region, with an area of 25ha. It comprises more than 100 storage tanks plus six underground storage cisterns with a capacity of 130,000 m³ for holding petrol, diesel, heating oil and other substances such as lubricants and naphtha. There are nine oil companies active at Loudden, two decontamination companies and one bunkering company situated in the area. After several years of intensive debate between stakeholders - politicians, oil companies, municipalities and NGOs - the city of Stockholm finally took a unilateral decision in 1999 not to prolong the contracts with the oil companies at Loudden after 2011. One motivation for the decision was to get rid of the transportation of petroleum products by lorries travelling through the city and the transportation of petroleum products in the archipelago. The decision to close the Loudden Docks gradually developed up to 1998, when an accident occurred close to Loudden. The safety aspects can often radically change public opinion when an accident occurs. This happened when a tanker containing 14 tonnes of propane was involved in an accident close to Loudden in 1999. This accident did not lead to any severe consequences but there could easily have been a catastrophe. Another important motive for closing the Loudden Docks was Stockholm City's comprehensive strategy to transform industrial land to build new housing. The new City Council opted to sign contracts with the oil companies up to 2008, with the possibility for prolongation to 2011. The decision to close the Loudden Docks after 2011 has recently been changed to 2016, largely because no alternative site

for the oil terminal has yet been identified. There is now a process running for finding a new solution for the regional supply of petroleum products using a mix of other existing harbours as well as inland-depots. The handling of aviation fuel has been moved to a town 175 km north of Stockholm.

b) Objectives

The three overall environmental targets for Stockholm Royal Seaport are: by 2020, carbon emissions are lower than 1.5 tonnes per person; by 2030, it is free of fossil fuels; and it is adapted to future changes in climate. The challenge is directly linked to the need to adapt the city and urban development to the climate changes that is likely to give Sweden a hotter and more humid climate.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

Stockholm City council is responsible. Stockholm City owns the Stockholm Harbour Company which operates the docks in Stockholm,

b) ICZM tools

The new city district, Stockholm Royal Seaport, is currently being built in Stockholm's harbour area. The urban development plan is due for completion in 2025 and will cover an area of 260 ha. some 2 km from the city centre to which it will be linked with bio-gas fuelled buses. It will be home to 55,000 in 10,000 apartments and 30,000 work places. It is located on former brownfield areas and ambitious environmental targets have been set. Stockholm Royal Seaport is aiming to be fossil fuel free by 2030, while the entire City of Stockholm is aiming for 2050. By 2020, residents and workers in Stockholm Royal Seaport should produce less than 1.5 tonnes of carbon emissions per person. The entire development project will focus on sustainable transport solutions, efficient building processes, energy conservation and energy efficiency, and on the whole adapted to future climate change. The building works for the first 700 dwellings in the northern parts of the area will commence in 2009 and the first occupation is estimated for spring 2011.

Large investments have been made on public transport, and on the extension of new road infrastructure. The underground has been complemented with a modern city tram through the area. Many residents and workers use the pedestrian and cycle lanes that connect Stockholm Royal Seaport with the city centre and the existing large, green park areas. Environmentally friendly public transport has also been developed on the surrounding waters. The port and energy plants have continued to develop and have been integrated with the new urban development. The expansion of the piers has resulted in new quay space and terminal buildings. At the same time, port operations have been made more efficient and concentrated at Värtan-Frihamnen which has developed into a passenger port. All citizens are able to follow the environmental monitoring programme via internet.

7. Cost and resources

The development is budgeted at \$2.5 billion.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

Stockholm, itself, has reduced CO2 emissions by 25% compared to 1990 levels and the share of renewable energy in district heating is nearly 70%. In one eco-district, the waste water from a single household produces sufficient biogas for the household's gas cooker. Most biogas is, currently, used as fuel in eco-friendly cars and busses. 25% of the waste produced by Stockholmers is recycled, 73.5% is recovered for production of district heating (energy recovery by incineration) and 1.5% is biologically treated. 77% travel by public transport during peak hours. All inner city buses run on renewable fuels and all subways and commuter trains run on renewable electricity. The number of people cycling has increased by 75% over the past ten years. Stockholm has 760 km of cycle lanes, and more are being built. A congestion charge was introduced in 2006 for

cars travelling in and out of the inner city area during daytime hours. The emission reduction levels from the effect of the congestion taxes was approximately 30,000 tonnes CO₂ in the year 2006. Traffic has been reduced by 20%, emission levels are down 10-14% and air quality has been improved by 2-10%. 90% of the population live less than 300 metres from a green area. A few decades ago, there were heavy industries on the plots along the water-front, and the water was heavily polluted. Now there is a park, and the water is good for fishing. Through a systematic effort to reduce emissions, energy consumption, waste and noise, the Ports of Stockholm Group has been awarded the highest environmental classification among all the world's p

9. Success and Fail factors

To reduce the net greenhouse gas emissions of their Climate Positive Development projects to below zero, property developers and local government is working in partnership on specific areas of activity. This includes implementing economically viable innovations in buildings, the generation of clean energy, waste management, water management and transportation and outdoor lighting systems.

10. Unforeseen outcomes

Stockholm's environmental work has been acknowledged by the European Commission which has named Stockholm the first European Green Capital. The European Green Capital Award is given to a city which is noted for achieving high environmental standards, is committed to ambitious goals for further environmental improvement and sustainable development and which can act as a role model to inspire others and promote best practices in other cities. The Stockholm Royal Seaport development was announced as one of 16 founding projects of the Climate Positive Development Programme, a Clinton Climate Initiative (CCI) programme that will support the development of large-scale urban projects that demonstrate cities can grow in ways that are climate positive.

11. Prepared by

A. H. Pickaver, Coastal & Marine Union (EUCC), The Netherlands

12. Verified by

Staffan Lorentz, Project Manager

13. Sources

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	Loudden - a controversial harbour for petroleum products (490.9 KB)	
	Methods for risk assessment paper (783.48 KB)	
	Stockholm Royal Seaport (1.2 MB)	
	Stockholm winner 2010 (735.21 KB)	

