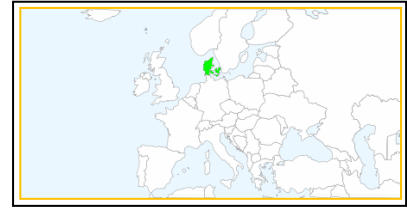


# International Green Roof City Network

## Case Study Copenhagen, Denmark



### 1) City Data

#### Location

Copenhagen is the capital of Denmark. Denmark is located in North Europe, a part of Scandinavia

#### Area

The area is 89.8 km<sup>2</sup>

#### Population

The City of Copenhagen has 510,000 residents, 9.5 % of Denmark's population

#### Other Information

The City of Copenhagen has seven administrations. Each administration deals with the tasks related to its standing committee. The urban development project North Harbour is Scandinavia's biggest development area.

## 2) Description of the local Green Roof Policy Initiative

### 2.1 Start

Starting with the Wastewater Plan in 2008, we began focusing on alternative ways to handle rainwater. In 2009, Denmark was in charge of the UN Climate Change Conference COP15 which defined the framework for the strategies that could be implemented to meet the challenges of climate change. During that period, the focus on green roofs intensified, peaking with the addition of a goal for urban design and green roofs to the Climate Plan of the City of Copenhagen.

### 2.2 Expected environmental benefits

- Stormwater management
- Biodiversity
- Urban Heat Island Effect
- Air Quality
- Climate Change
- Energy Savings
- Beautification of the City

### 2.3 Environmental benefit that is the carrier of the green roof initiative

Especially stormwater management seems like being a benefit that easily gets the politicians attention. When we have flooding the consequence of traditional urban planning with paved surfaces is very visible. And the cost of damage is high. This forces the politicians to make a move. A lot of interested parties recognize the other benefits but the cost benefit of these is not so obviously.

## 2.4 Support instruments that are used by the municipality to promote green roofs

- Building, landscape, energy, or other code or policy (e.g. land-use plan, green roof bylaw, zoning code, green factor, design regulations, etc.)
- Reduced stormwater fee
- Financial Incentives
- Tax Credits
- Favourable Credit Terms
- Density Bonus
- Demonstration Projects
- Ecological Labels
- Press, Internet
- Education and Information (e.g. seminars, conferences, green roof tours, etc.)
- Research
- Local Green Roof Guidelines..
- Consultancy offer for constructors, investors, building owner
- Other instruments

### Description of support instruments

**Building, landscape, energy, or other code or policy:** Today, green roofs are mandatory in several district plans dealing with city development. One of these district plans focuses on the biggest city development area in North Europe, the North Harbour, for which we have a vision of setting new standards for sustainable and climate-adapted solutions. As part of the planning process, green roofs have become integrated in different guidelines such as the guidelines for Environment in Building and Development and in our Strategy for Biodiversity. Copenhagen adopted a policy for green roofs in May 2010 which was a manifestation of a new planning philosophy. However, later the same year the Technical and Environmental Administration chose to alter that decision and instead make green roofs as part of the next Municipal Plan for 2012.

**Demonstration Projects:** With financial support from a fund for urban renewal a demonstration roof has been installed in the beginning of 2013. It's a cutting edge project in partnership with the owner of the building, the municipality's Children and Youth Administration together with the architect group which is working with urban renewal in the area. The project is intended to be a demonstration roof. It is a roof which is to be laid in connection with the total restoration of a building containing an institution. The roof garden includes a garden of the senses, trees, bushes and mosses, succulents, herbs and grasses. This project can show and tell the story about green roof as a sustainable solution. Another green roof also a renewable building project will be a reference of designing a green roof supporting biodiversity.

**Press, Internet:** The city of Copenhagen has a homepage about green roofs. The project manager of the green roofs Copenhagen has launched a homepage this year.

**Education and Information:** The City of Copenhagen has hold seminars, conferences and the World Green Roof Conference 2012.

**Research:** The process has benefitted from co-operation between scientific institutions, the private sector and public authorities. The universities have interest in contributing with new knowledge and documentation, the private sector represented by architects and landscape architects have provided design solutions. Finally, public authorities have been in charge of ambitious and visionary city planning. This co-operation works like a triple helix constellation. The above initiatives have until now resulted in four co-operation projects. A national institution called *Agro tech* has set up a test centre where the green roof market suppliers have their green roofs products on site while testing them for water retention. An architect company in Denmark has launched a project together with a university and the Municipality of Copenhagen in which they grow and test different plants supporting biodiversity, thereby building a concept for landscape solutions.

### **3) Number and area of green roofs**

About 54 green roofs, approx. 40,000 m<sup>2</sup>

### **4) Challenges and future prospects**

It's needed to keep on the debate and attention to this solution and fit it in to the political agenda and to realize that we have an arena of many interests. It's needed to insure green roofs documentations, that green roofs in fact add value to the cities and citizens. So continuously research on this topic is needed. To ensure longevity of green roofs as part of urban design focus on quality of the solutions and proper maintenance will need some kind of certifications.

### **5) Contact persons**

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### **6) Internet resources**

[http://www.klimatilpasning.dk/media/631048/green\\_roofs\\_copenhagen.pdf](http://www.klimatilpasning.dk/media/631048/green_roofs_copenhagen.pdf)

<http://international.kk.dk/sites/international.kk.dk/files/uploaded->

[files/Copenhagen%20Climate%20Adaptation%20Plan%20-%202011.pdf](http://international.kk.dk/sites/international.kk.dk/files/uploaded-files/Copenhagen%20Climate%20Adaptation%20Plan%20-%202011.pdf)

[www.vegetatedroofs.dk](http://www.vegetatedroofs.dk)