



**CLEVER**  
**Cities**

# Financing Green Roofs

An example from the CLEVER Cities  
Frontrunner City of Hamburg

Hamburg Institute of International Economics (HWWI),  
City of Hamburg

This project has received funding from the  
European Union's Horizon 2020 Innovation action  
programme under grant agreement no. 776604.



[www.clevercities.eu](http://www.clevercities.eu)

# Green Roofs: an Investment in the Future

## Financing of Green Roofs in Hamburg

- Financial benefits through savings in energy costs  
(heating and air conditioning costs)
- Financial benefits through savings in wastewater costs  
(owners of green roofs are exempted from 50 per cent of rainwater fees)
- Increased efficiency of PV systems if combined with green roofs
- Higher durability of green roofs compared to conventional flat roofs
- Hamburg's green roof subsidy



Photo: CLEVER Cities team

# More Green Roofs for Hamburg

## The Green Roof Strategy of Hamburg

As part of the Green Roof Strategy, the city of Hamburg is providing **funding** for green roofs:

- Owners of property and buildings can receive up to **60 %** of the costs (per square metre) as subsidies
- In specific cases **additional financial assistance** is possible, e.g. if the building is located in the inner city area or roofs with open-space use that are publicly accessible
- Maximum amount of a one-off subsidy is **50 000 €**



Photo and montage: mount. Design und Kommunikation für soziales Wachstum, Background photo: Michaela Stalter

## Assessment of the Green Roof Subsidy

- Max. budget from 2015-2019: **3 million €**
- At the end of 2018:
  - Applicants: Building owners and companies equally represented
  - Number of approvals: **118**
  - Net vegetation area: **4,5 ha**
  - Funding amount: **1,01 million €**
- Funding programme will be extended until the end of 2024

Cost advantage green roof with subsidy (without city centre supplement):  
**4 468 €**

# What does a Green Roof cost?

## Green Roof or Conventional Roof? - Making the Figures Comparable

Cost type	Green roof	Gravel roof
<b>1. One-time costs (300m<sup>2</sup> net vegetation area)</b>	Euro	Euro
Construction costs	9 437	3 000
Replacement after 20 years		7 475
Removal after 40 years	5 058	3 219
<b>Present value of costs (one-time costs)</b>	<b>14 495</b>	<b>13 694</b>
<b>2. Running costs (for 40 years, 300 m<sup>2</sup> net vegetation area)</b>		
Maintenance care (per year: green roof 0.50 euro/m <sup>2</sup> , gravel roof 0.25 euro/m <sup>2</sup> )	3 421	1 734
Rainwater fee	2 531	5 062
<b>Present value of costs (running)</b>	<b>5 952</b>	<b>6 796</b>
<b>Present value of costs (total)</b>	<b>20 447</b>	<b>20 490</b>
- Subsidy	- 4 425	
<b>Present value of costs (total), with subsidy</b>	<b>16 022</b>	<b>20 490</b>

## Green Roofs and Facades as part of CLEVER Cities

- CLEVER Cities supports the **design and implementation** of green roofs and facades in the CLEVER Cities project area through
  - Providing **expertise** and consultancy
  - Addressing **barriers**
  - Providing **financial** support for innovative Nature Based Solutions and as well as support in finding additional ways of funding
  - Providing **support for applications** for the green roof subsidy
- **Time frame** for CLEVER Cities projects
  - 3 years for implementation (→ summer 2021)
  - Additional 2 years for monitoring (→ summer 2023)
- The CLEVER Cities project is open to **all stakeholders** in the project area. Meetings with interested stakeholders have already taken place to co-develop green roof / facade projects

## CLEVER Cities Criteria for Green Roofs (excerpt)

- Add **ecological value** by
  - **Structural elements**
  - **Habitat design** according to the needs of protected creatures or groups of creatures,
  - **Evaluation** of habitat quality of rooftop
- Combination of **renewable energy** and green roof
  - Photovoltaic
  - Wind power
- Increased **rainwater retention** by using
  - **Digital infrastructure** to improve rainwater retention
  - 100% retention of a 100-annual flash flood event on the rooftop
- Improved **usage of free space** by
  - **Accessible** rooftops
  - **Use concept** that supports usage of green roof going beyond the pure possibility to stay on the roof top



**CLEVER**  
**Cities**

**Thank You!**