

GROOF



Greenhouses to Reduce CO₂ on roofs

Interreg North-West Europe GROOF

European Regional Development Fund

11

Partners

France, Belgium, Germany,
Spain, Luxembourg

4,9

Millions euros

**An innovative and multidisciplinary approach
to reduce CO₂ emissions in the construction and agricultural sectors
by combining energy exchange and local food production**







TODAY

Experiment and **demonstrate** the reduction of energy emissions from 4 pilot rooftop greenhouses,

TOMORROW

Support pioneering projects by providing them with professional advice aimed at energy savings,

SUSTAINABLE

Convince legislators, public institutions, real estate developers, building owners... that rooftop greenhouses offer many advantages.



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© Lufa Farms



© Tours Habitat



Rooftop greenhouses as useful equipment for:

- Reuse resources not consumed by the building
- Collect CO₂ produced by people and building activities for the benefit of plants
- Increasing food resilience in urban areas



Bürstadt (DE)

7



Bürstadt (DE)



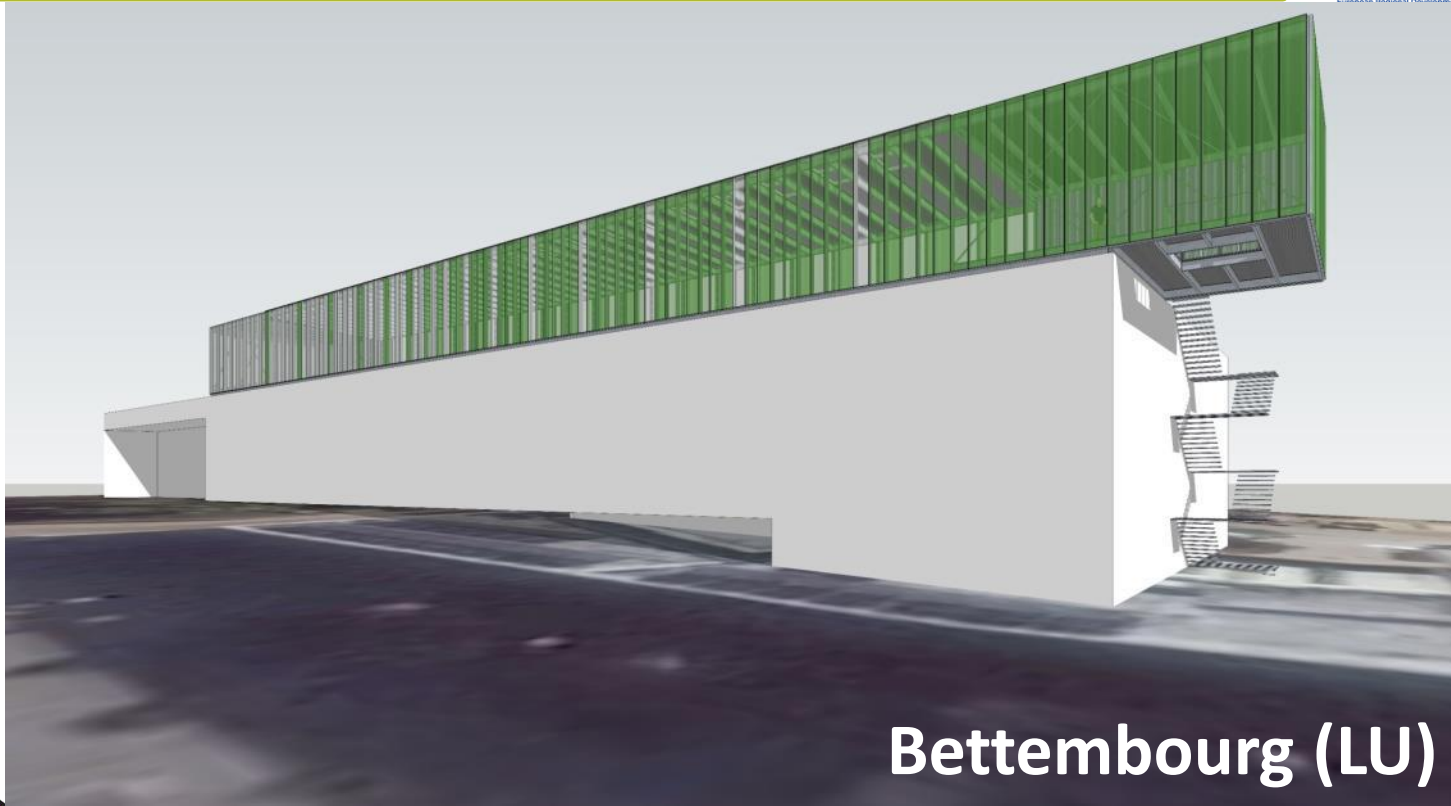
Gembloux (BE)







Gembloux (BE)



Bettembourg (LU)



Bettembourg (LU)



**LES FERMES
DE GALLY**



Saint-Denis (FR)



Reference Scenario GHG Emissions



General setting greenhouse		
Design	Venlo type greenhouse	
Greenhouse area	5000	m ²
Length	71,00	m
Width	70,00	m
Height	4,80	m
Productive area	90%	
Productive area	4500	m ²
Temperature night	20	°C
Temperature day	19	°C
Lifetime greenhouse	30	years
Cultivation system		
Fruit	Tomato	
Yield	52	kg/m ² *a
Water demand	900	l/m ² *a
Share Rainwater	50%	of total water demand
Share tap water	50%	of total water demand
Waste water	10%	of water input, assumption
Fertilization	conventional, mineral NPK fertilizers	
Organic waste (plant, tomatos)	38%	of the yield
Organic waste treatment	Seperate collection, regional treatment	
Digestion	20%	Assumption
Composting	80%	Assumption

	Reference - Best	Reference - Medium +	Reference - Medium -	Reference - Worst
Greenhouse design				
Roof covering	Foil (F-Clean) double layer	Single glass	Single glass	Single glass
Walls	Polycarbonate 32 mm	Polycarbonate 16 mm	Polycarbonate 16 mm	Double glass
Thermal screens	2 screens	1 screen	1 screen	1 screen
Energy				
Energy carriers for heating	Biomasse 80% / Gas 20%	Gas 100%	Oil 100%	Coal 80% / oil 80%

Objective: Model a conventional greenhouse in NWE for comparison

GROOF JURY

10 PROJECTS SELECTED
FOR 1 YEAR OF COACHING
TO BUILD UP THEIR
ROOFTOP GREENHOUSE





Habitat
participatif



Les Petits
Poucets



Candidates detailed profiles coming soon

www.groof.eu

contact@groof.eu

CONVINCE

Roof-mounted greenhouses offer many advantages:

- Reduction of CO₂ emissions
- Greener image
- Social benefits
- Involvement in local food production....

Upcoming events:

BATIMAT



SMARTCITY
EXPO WORLD CONGRESS



WUR STUDENT CHALLENGE
URBAN GREENHOUSE

THANK YOU FOR YOUR ATTENTION



@GROOFproject

Any questions?

contact@groof.eu

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