

# ENERGY PERFORMANCE IN HOUSING

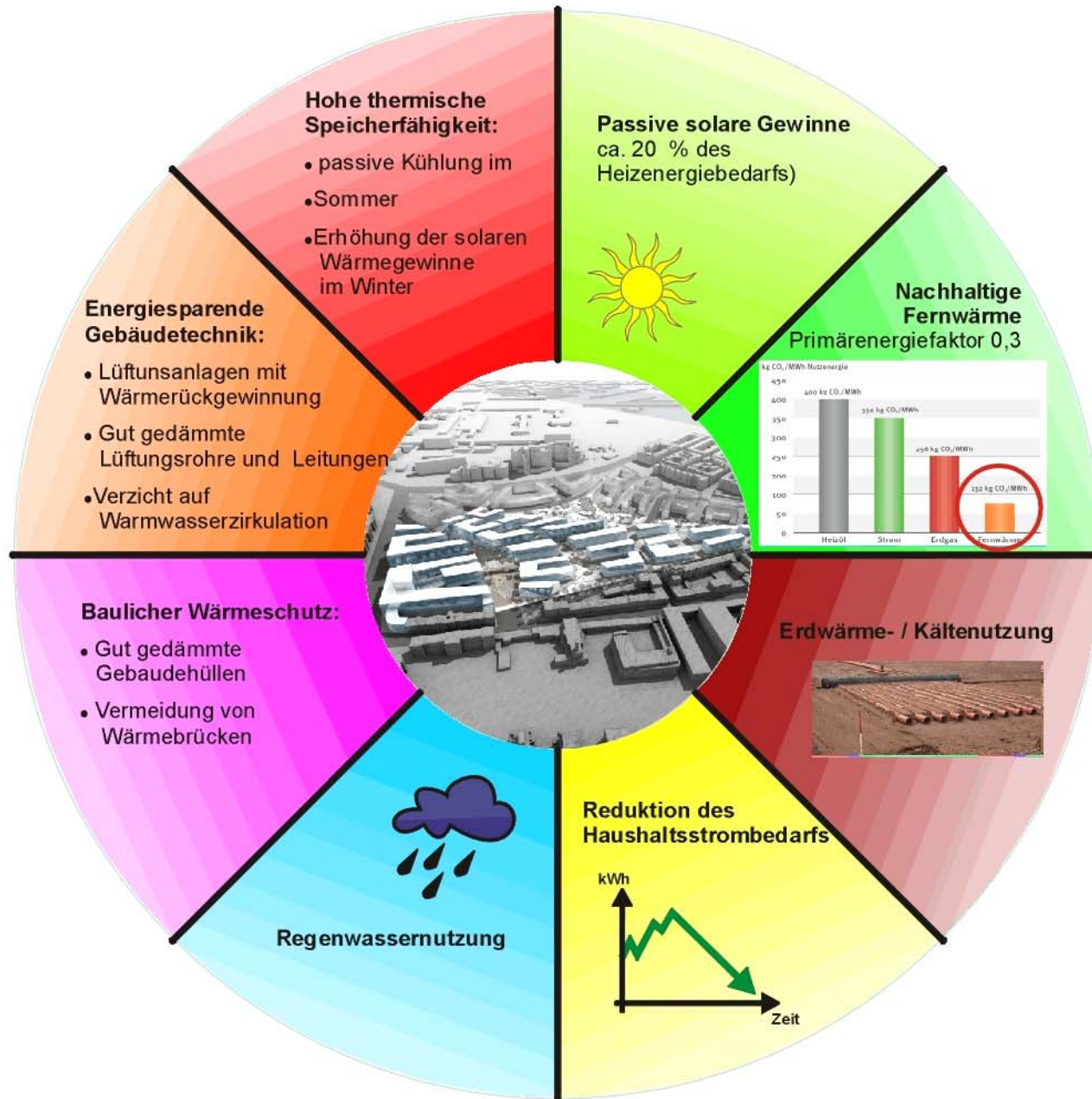


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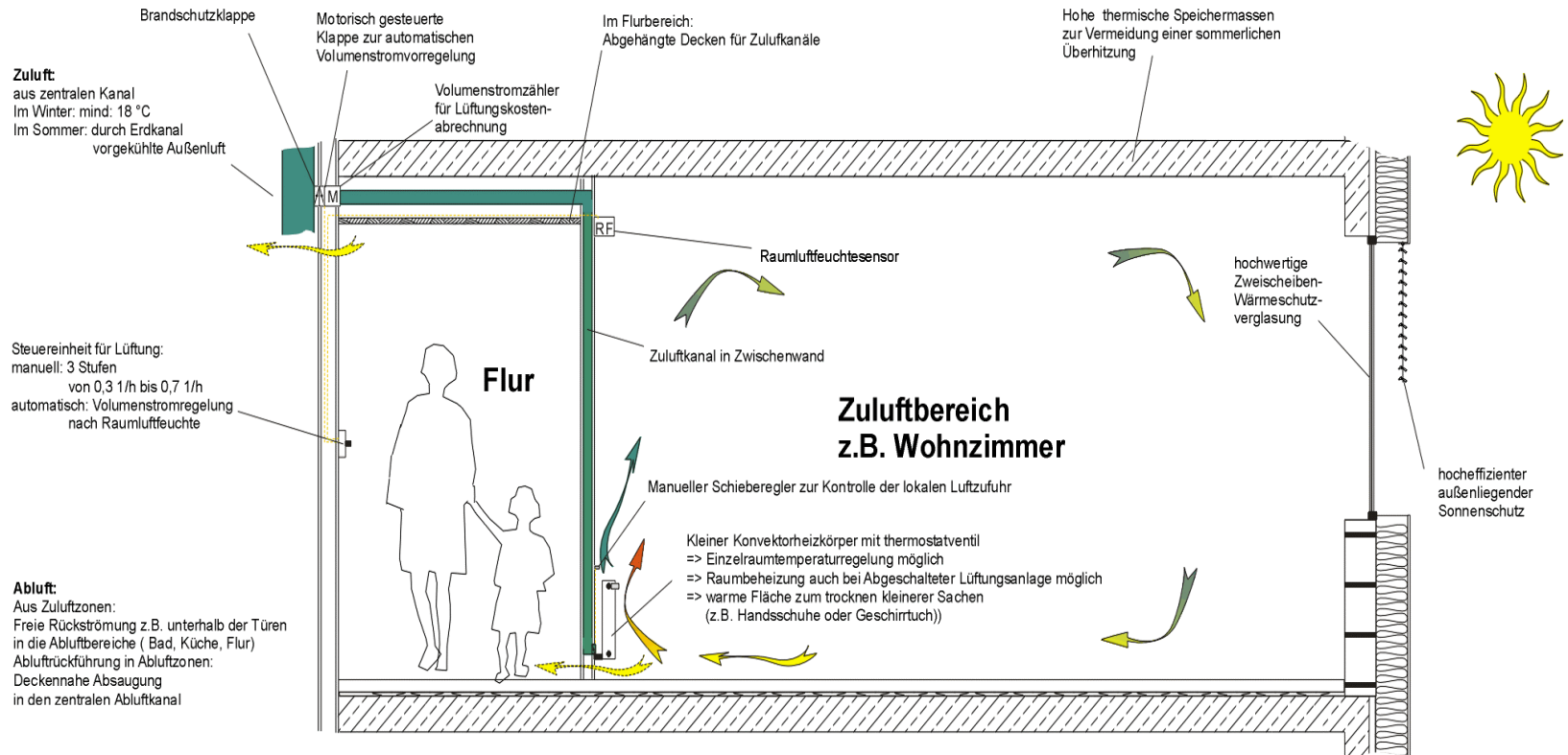
# New housing construction

- Minimal standard required by building regulations: low energy building (29 to 38 kWh/m<sup>2</sup> a)
- \* Future standard: passive housing (12 to 14 kWh/m<sup>2</sup> a)
- District heating (primary energy from waste incineration, max. 30% from fossile energy sources)
- Renewable or alternative energy (solar energy, photovoltaic, earth heat, heat recovery from used air, ground water use, automatic ventilation, grey water recycling)

# Passive house energy concept



# Scheme: passive housing technology





# Panel Housing Refurbishment



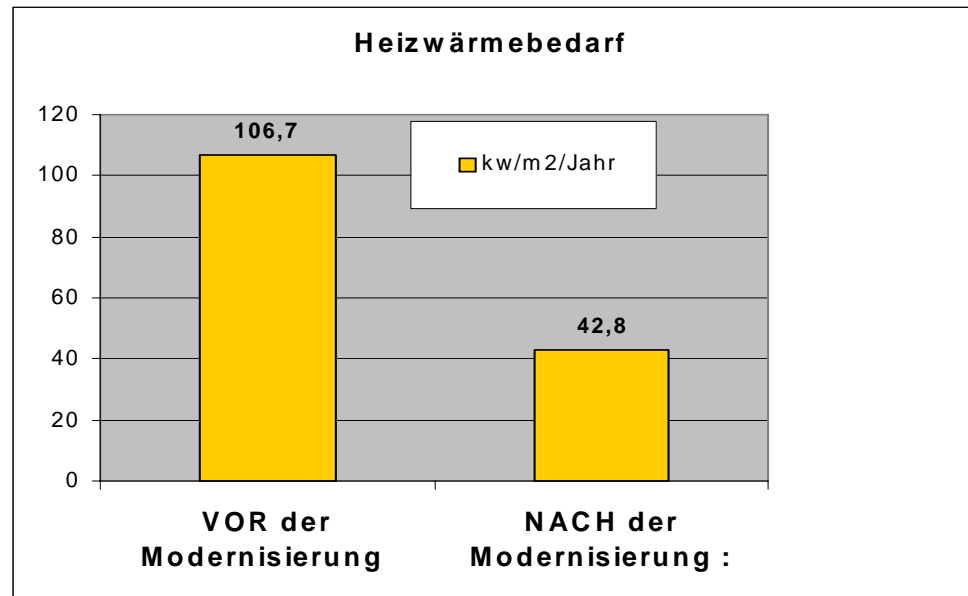
## Thermal Rehabilitation: Reduction of CO2 emission

- Insulation of facades and roofs
- Ecological optimizing of buildings
- Renewable energies
- District heating



# Thermal Rehabilitation

**Average energy consumption  
for heating  
before and after  
thermal improvement**



**Reduction of energy consumption: 63,9 kWh/m<sup>2</sup>/year = - 60 %**

# **RESULTS (Case Study Vienna)**

**Reduction of heat energy by more than 50%**

**Reduction of CO<sub>2</sub>-emissions by 97000t  
annually**

**Reduction of energy consumption by 269  
GWH annually**

**97.000 t CO<sub>2</sub> = 610 mio km/a = 61.000 cars...**



# ENERGY PERFORMANCE IN HOUSING: COOPERATION UNECE - CECODHAS



# ENERGY PERFORMANCE IN HOUSING

## Cooperation of UNECE and CECODHAS

### Aims?

- Know-how transfer to practitioners all over Europe with an emphasis on CEE-countries concerning new construction and rehabilitation
- Reduction of energy costs for residents
- Climate protection

### Who?

- UNECE Committee on Housing and Land Management
- UNECE Committee on Sustainable Energy
- CECODHAS Working Group on Energy and Sustainable Urban Development

### Why?

Synergies through cooperation with different networks:

- UNECE: member states, cities
- CECODHAS: social housing sector

# **ENERGY PERFORMANCE IN HOUSING**

## **Cooperation of UNECE and CECODHAS**

### **How?**

- Joint working group
- Joint workshops

### **When?**

- Start of working group: October 2008
- Workshop 1: first half of 2009
- Workshop 2: end of 2009

### **Where?**

- WS 1: to be decided
- WS 2: Vienna offered to host

# ENERGY PERFORMANCE IN HOUSING

A nighttime photograph of a cityscape viewed from an elevated position. In the foreground, a river flows through the city, with a bridge crossing it. The city lights are visible, and the background shows rolling hills or mountains under a dark sky. The text "THANK YOU !" is overlaid in the center of the image.

**THANK YOU !**

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