



8. HRVATSKI  
FORUM  
O ODRŽIVOJ  
GRADNJI

# How Europa does it?

Best cases of Green Buildings funded by EU funds

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**USA –  
long  
distanc,  
but it's  
good to  
learn  
from  
them!**



**8. HRVATSKI  
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**Neighbor's – similar  
environment – why not  
copy them?**



**Europa – new trends and regulations  
– it's good to follow them**



# CZECH REPUBLIK

- HOSTETIN CENTRE FOR SUSTAINABLE RURAL DEVELOPMENT, Hostetin Village



The centre was the first passive house building funded by EU!



# Hostetin Centre for Sustainable Rural Development

## ABOUT PROJECT:

- Commercial Property, managed by NGO - Ecological Institute Veronica (EIV)
- Completed: September 2006
- Building Standard: passive house ultra-low energy use
- The Hostetin centre is a showcase for energy efficiency
- Comprises of an auditorium for 45 people, an office area, a library, creative workshop space and a 10-room guesthouse building for 25 people
- [www.hostetin.veronica.cz](http://www.hostetin.veronica.cz)



## GREEN ASPECTS:

The White Carpathian Mountain region is a UNESCO Biosphere Reserve, and is home to large wolf populations, 600 traditional fruit varieties and 70 protected species of flora

### Environmentally friendly construction materials

- Locally produced and natural construction materials were used for the centre to minimise the environmental impacts of transporting and producing new and potentially damaging materials

### 'Passive house' building standards

- The centre uses superinsulation, advanced window technology, airtight construction techniques and a heat recovery ventilation system in order to minimise energy for space heating
- The Hostetin centre annually consumes less than 15 kWh per square meter

### Energy efficiency

- The centre is equipped with an intelligent lighting system, which adapts light intensity according to space usage. All light fixtures are energy efficient and efforts were made to reduce external light pollution.



## GREEN ASPECTS:

### Water efficiency

- In order to reduce the consumption of potable water, rainwater is collected and used in the sanitation systems and for landscape irrigation
- Water-efficient fixtures are also used in the centre, such as multistage flushing systems

### Renewable heating and cooling

- The minimal heating requirements of the Hostetin centre are met by the Hostetin village wood-chip heating plant, which sources from local sustainable forests to ensure that forested areas are maintained and the ecological balance is not compromised.
- In warm weather the centre is cooled by natural convection, which is built into the design.
- The Hostetin centre is also equipped with a solar heating system to produce hot water.



## GREEN ASPECTS:

### Green roofing

- Green roof, which consists of 254 low-growing plants.
- The green roof acts as an extra layer of insulation and is likely to last longer than a conventional roof because the roofing material is protected from ultraviolet light and thermal stress
- The roof vegetation also enhances the centre's appearance, improves local air quality and reduces the urban heat island effect

### Public environment improvement

- Trees have been planted in the village to compensate for seven trees that were felled to make way for the centre, and the area around the centre has been landscaped with trees, bushes and flowers
- The centre also acts as a sound barrier between a residential area and the EIV organic juice factory



# Hostetin Centre for Sustainable Rural Development

## SOCIAL ASPECTS:

### Stakeholder involvement

- During the design stage the Hostetin community and EIV staff contributed in all phases of planning, construction and now using the building
- Unemployment rate over 20% > out-migration of young people!
- 8 volunteers also helped install the straw insulation
- **Sustainability construction education > Sharing knowledge**
- **Ongoing sustainability education**
- **Creation of a comfortable indoor environment**
- **Occupational safety**
- **Sustainable village planning; Improved village communications**





## ECONOMIC ASPECTS:

### Project finance

- US\$650,000 or 54% of the project budget, from the EU Regional Development Fund
- EIV contracted Skanska CZ to construct the US\$1.4 million centre

### Local construction employment

- Majority of the 36 workers and craftsmen were from the local area

### Permanent job creation

- 5 permanent EIV positions were created - full and part-time project and course managers, and staff to run the centre.

### Local suppliers and materials

- Local suppliers and materials were used where possible to reduce project costs and support the local economy – wood, straw for insulation, brick from demolished farm



## ECONOMIC ASPECTS:

### The use of local accommodation

- Rented rooms in a small hotel from the local authorities during the 6-month construction period

### Energy efficiency cost and savings

- the passive house building uses up to 80% less energy than a conventional building and the initial investments in energy efficiency are estimated to be paid back within 26 years of operation due to reduced operating costs (based on 2006 energy costs)

### Tourism promotion

- visitor numbers to Hostetin have doubled to almost 1,500 in the first half of 2007 (compared to 2004 figures)
- Many visitors are interested in sustainable development issues and make a visit to the centre



# Knezice Biogas Power Plant

## ABOUT PROJECT:

- Knezice biogas power plant in the town of the same name, 70 km east of Prague, produces renewable energy from biodegradable waste, and has solved municipal waste management problems, promoted local energy self-sufficiency, reduced greenhouse gas emissions and provided residents with cheaper energy



## ABOUT PROJECT:

- Skanska CZ constructed the US\$ 7 million biogas power plant between 2005 and 2007 for the local authorities in Knezice
- The European Regional Development Fund financed 75 percent of the project, 10 percent was provided by the Environmental State Fund and the rest from the local authorities



# SLOVENIA

- EKO SILVER HOUSE, Ljubljana



# Eko Silver House, Dunajska City Avenue

## ABOUT PROJECT:

- Multi residential building in the passive standard
- Start: 2011 – Completed: 2014
- 128 apartments on 11 floors and 278 parking place
- Ttl number of floors 17; 3717 m<sup>2</sup> of land; walled up area 1568 m<sup>2</sup>
- ENERGY EFFICIENT DEMO MULTIRESIDENTIAL HIGH RISE BUILDING (EE-HIGHRISE) is a research and demonstration project supported by the European Commission within the 7. Framework Programme (FP7-2011-NMP-ENV-ENERGY-ICT-EEB)
- [www.ee-highrise.eu](http://www.ee-highrise.eu); [www.ekosrebrnahisa.si](http://www.ekosrebrnahisa.si)



## ECONOMIC ASPECTS:

- Consortium cluster in Slovenia – 5 different countries 10 partners:
- Akropola, ZRMK, Remty, Robotina, Sybrotech, Elektron, R.E.D. Italy, GIZ, Univerza v Ljubljani, UMEA Sweden
- Grant Agreement: ENER/FP7/285209/HIGHRISE
- Start: 1.1.2013. – Const. Completed: 2014
- Project duration 3 years
- Special demonstration and advertising; Virtual Building
- EU project EE Highrise, which runs parallel with the construction of the building and includes preliminary calculations, precise monitoring during the construction of the building and verification of the building with measurements, analyses during 18 months after the construction completion.



# Rinka Centre, Solčava

## ABOUT PROJECT:

- Multipurpose residential and non residential centre for sustainable development of the region Solčava
- Architect Uroš Lobnik; 2011, 2012
- Investment 1.200.000 €; EU funding 800.000 €





# And how does it Croatia?

Thank you all participation in this fabulous  
Forum!

Big thanks to Holcim Hrvatska for organising it!

More info about Green Buildings on:

[www.gbccroatia.org](http://www.gbccroatia.org)

