



ÉPÍTÉSÜGYI MINŐSÉGELLENŐRZŐ  
INNOVÁCIÓS NONPROFIT KFT.



***PIMES CONCERTO EU project in  
Szentendre:  
Application of Energy Efficiency in  
Buildings and Large Scale RES***



Sustainable Architecture International Conference  
Szentendre/HU 16.10. 2014.



Dr. Károly Matolcsy  
Director of ÉMI knowledge centre  
PIMES Local Coordinator.

PIME'S receives funding from the  
European Union 7th Framework  
Programme under Grant  
Agreement No 239288



# Formal experience: Green Solar Cities Salzburg



- **Brownfield project**
- **Quality agreement**
- **Solar thermal + heatpump**
- **Passive house concept**
- **New building and rerofitting**
- **Public acceptance**
- **Monitoring, online info**



## Előzmények: Green Solar Cities Copenhagen

- Formal R&D projects
- VALBY 2025: 300 000 m<sup>2</sup> PV
- 15 % of electricity from solar
- Brownfield area: Carlsberg
- Building integrated PV
- CHP on biomass
- Energy+, Energy++ building
- New and retrofitting
- PV cooperative



# Staccato Faluház



# PIME'S projekt: Dale (NO), Szentendre, Vitoria (ES)

European scale  
multiplicable options

2009-2014/5

R & D & I

Demonstration



Large scale renewables

Energy management: microgrid

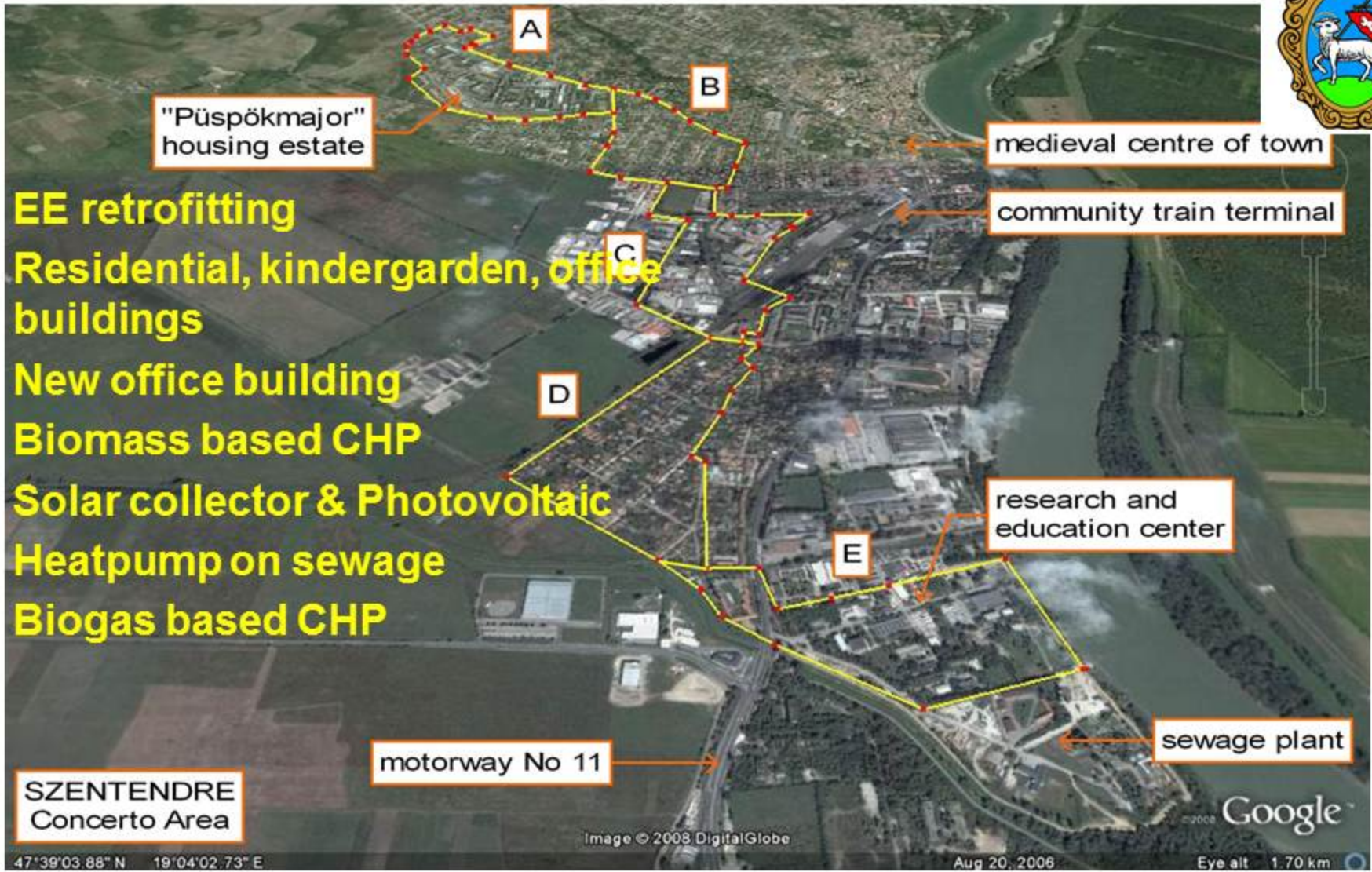
Utilise local resources

Recycled insulation

Efficient cost reduction



# PIMES CONCERTO area Szentendrén



"Püspökmajor"  
housing estate

medieval centre of town

community train terminal

**EE retrofitting**  
Residential, kindergarden, office  
buildings

**New office building**

**Biomass based CHP**

**Solar collector & Photovoltaic**

**Heatpump on sewage**

**Biogas based CHP**

research and  
education center

sewage plant

motorway No 11

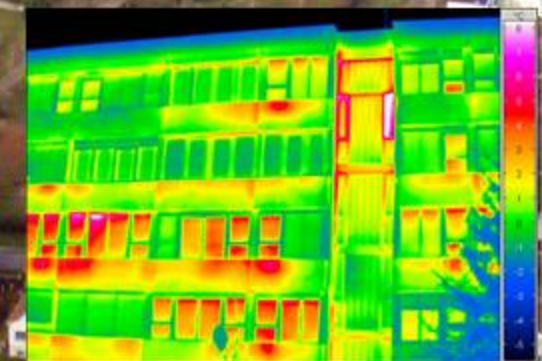
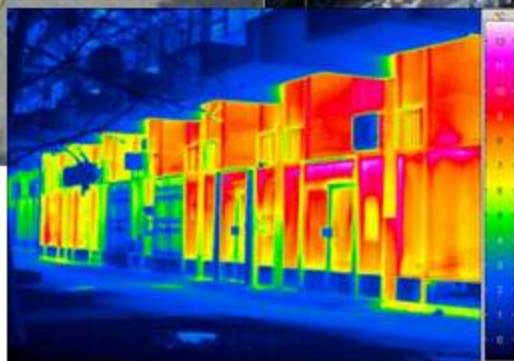
**SZENTENDRE**  
Concerto Area

Image © 2008 DigitalGlobe

Aug 20, 2006

Eye alt 1.70 km

# Püspökmajor: Hamvas Béla utcai residential retrofitting

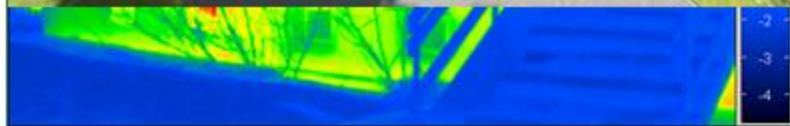
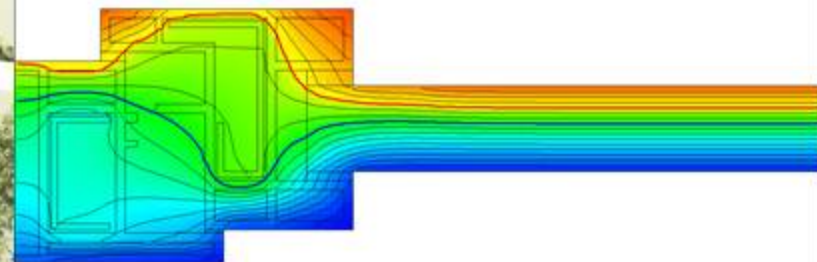


# Püspökmajor: Hamvas Béla utcai residential retrofitting



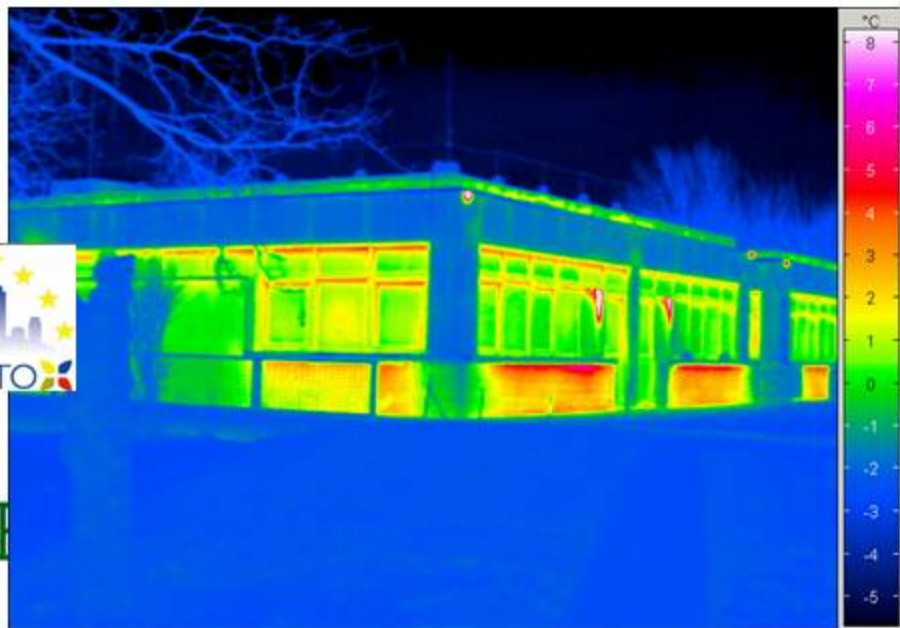


# Püspökmajor residential retrofitting „English houses”



# Püspökmajor kindergarden retrofitting

- Sunspace
- Recycled polystyren
- Green roof
- PV as shading



# Püspökmajori kindergarden PIMES retrofitting : Footing-roofing-sunspace



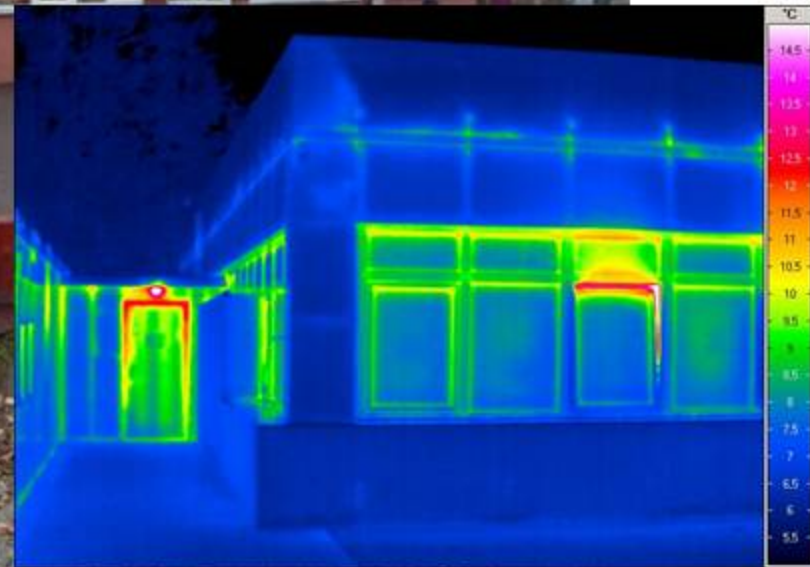
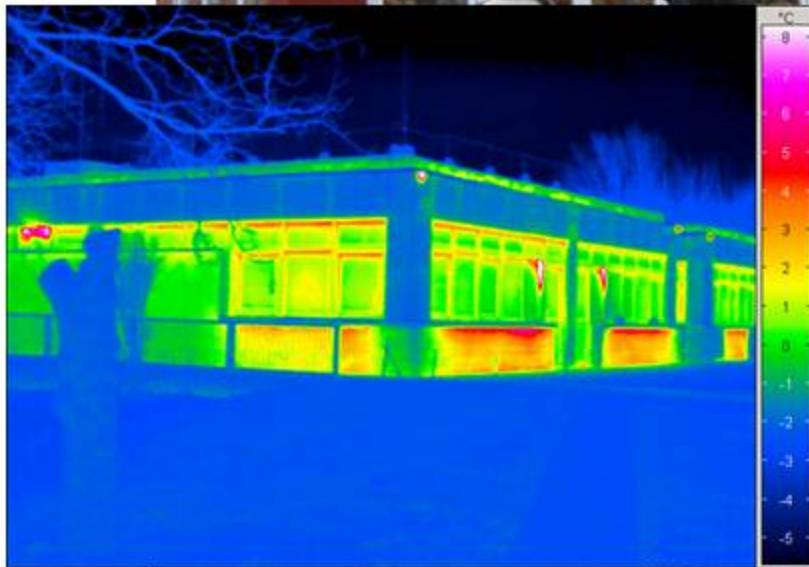
# PIMES retrofitting : New attic wall with recycled cellulose



# PIMES retrofitting : new roof, green roof



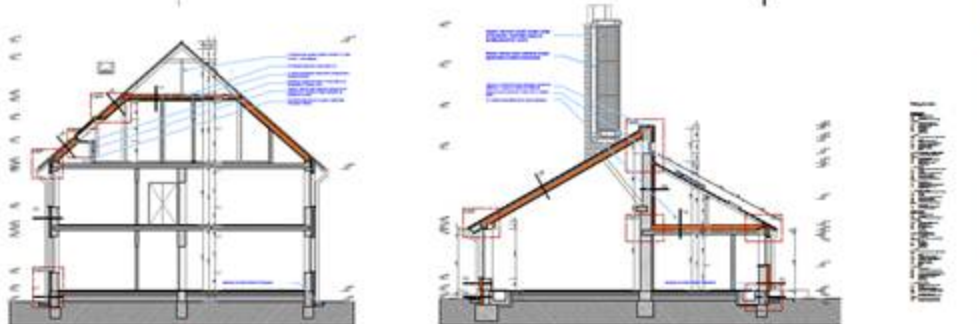
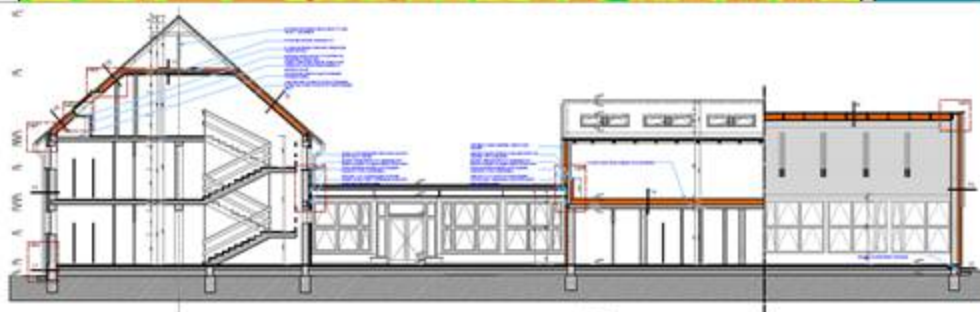
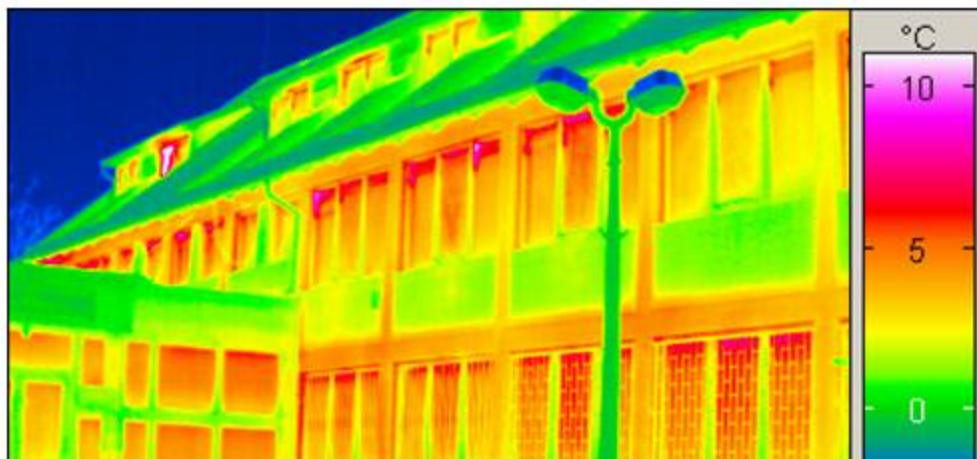
# Püspökmajori kidergarden PIMES retrofitting



# Püspökmajori kidergarden PIMES retrofitting



# VSZ Zrt office retrofitting





# VSZ Zrt office retrofitting



# VSZ Zrt office retrofitting



# VSZ Zrt new solar systems



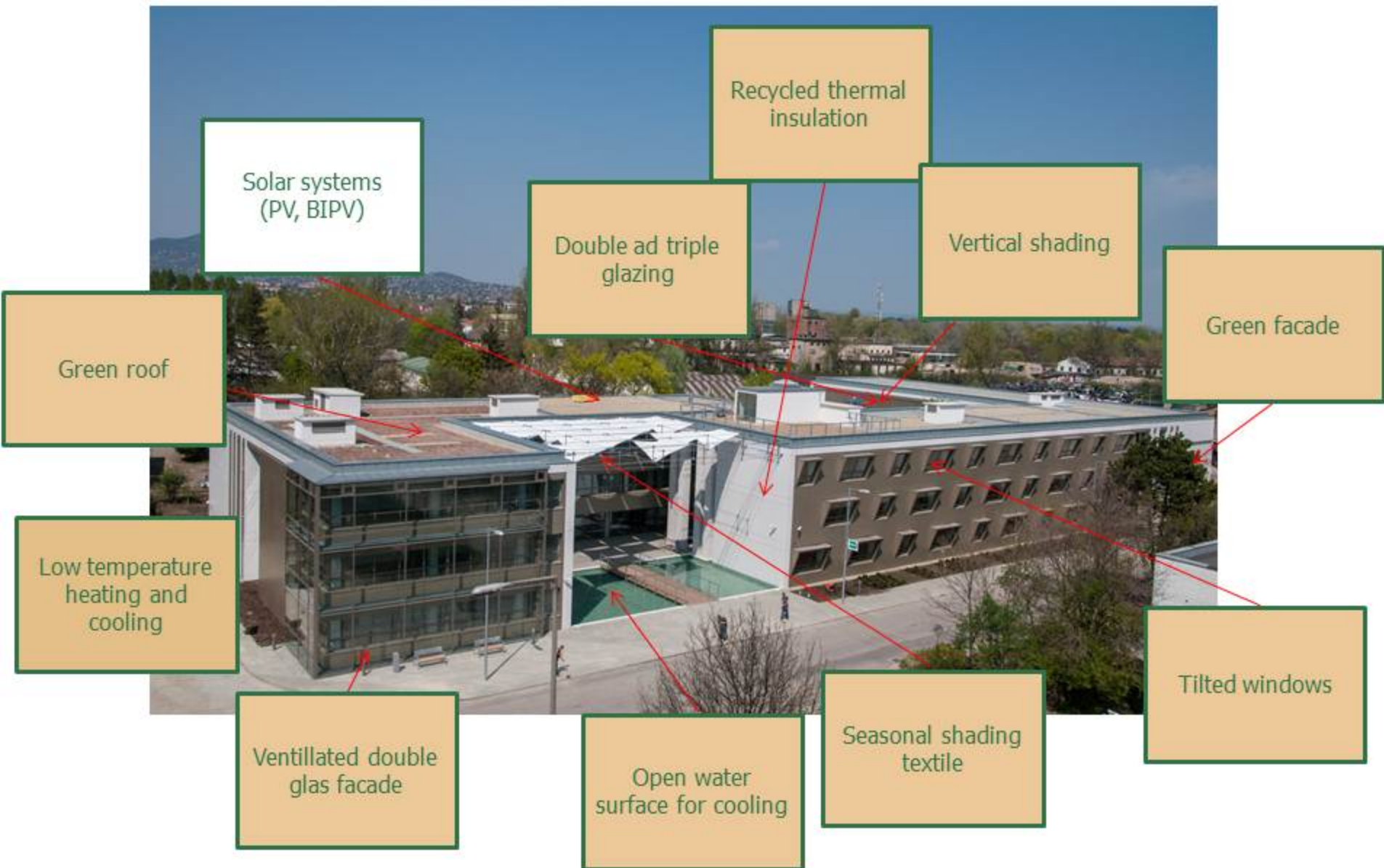
# VSZ Zrt biomass based CHP



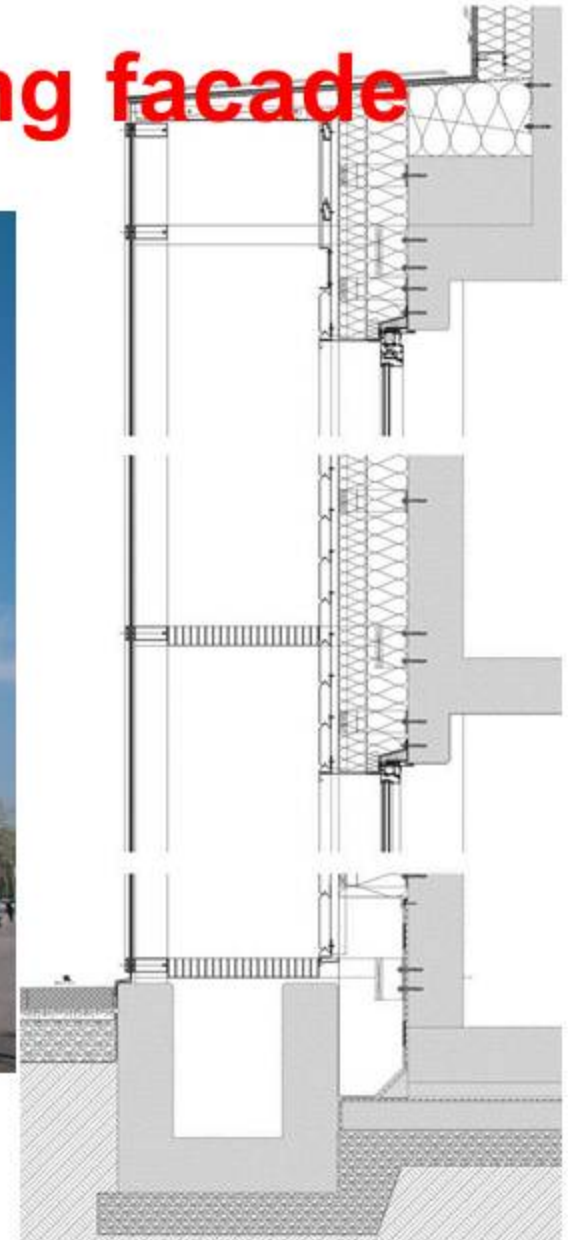
# VSZ Zrt biomass based CHP



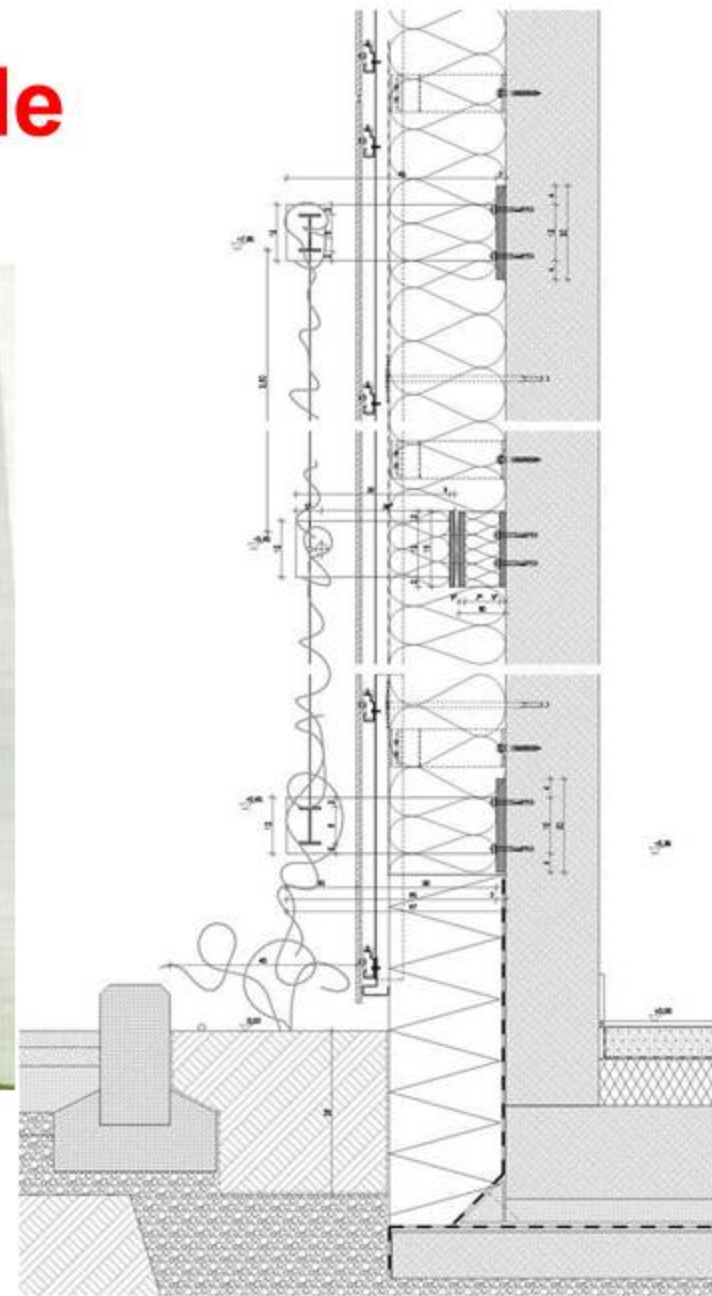
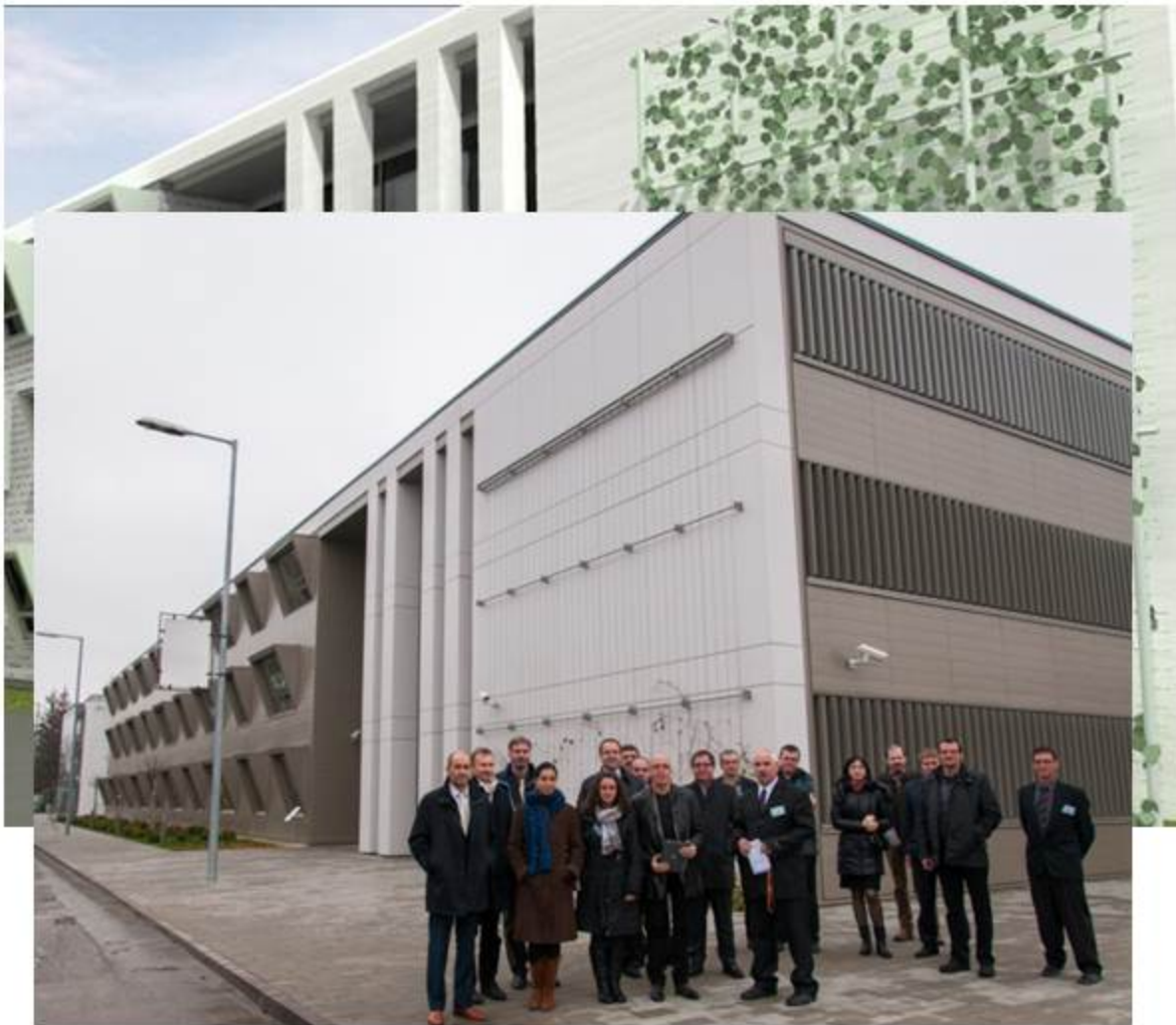
# ÉMI new office building



# Ventillated double glazing facade



# Green facade

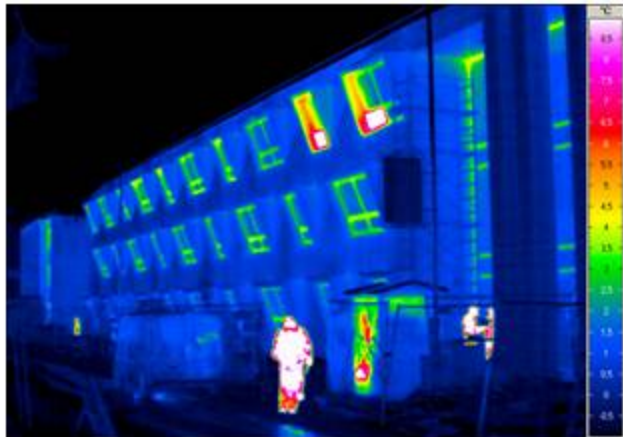




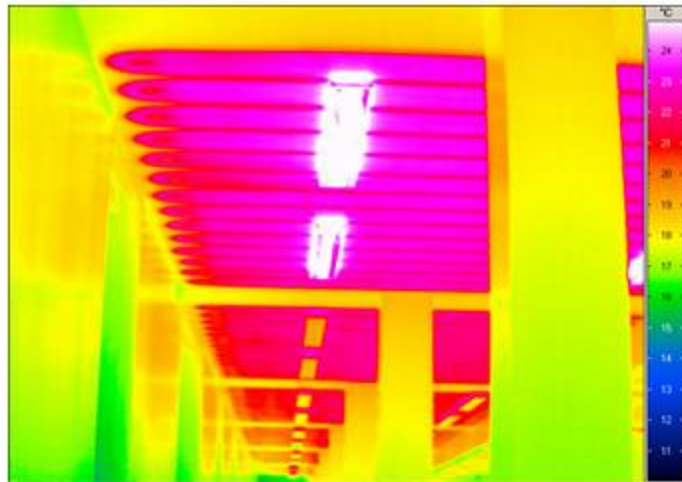
# Summer shading



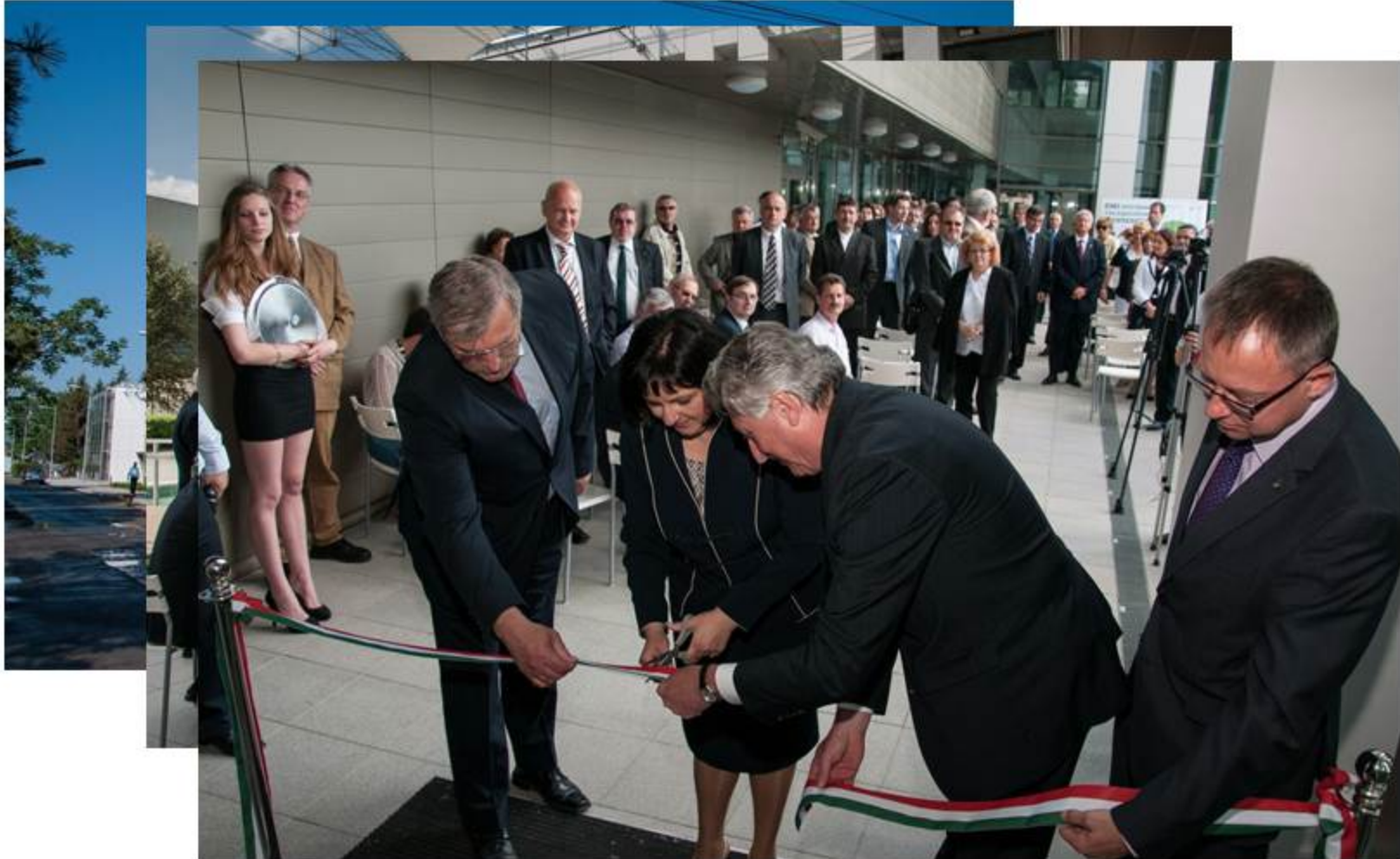
# Recycled thermal insulation



# Low temperature heating and cooling



# Opening ceremony 2013



# Biogas based CHP, heat pump on sewage



# Heat pump on sewage



# Biogas based CHP, heat pump on sewage



# Integration: car park shading with PV

Type: UNISOL PV-49: 320 p  
PV surfaces: 252,984 m<sup>2</sup>  
Slope: 35 degree, kWp: 15,68  
Planned yearly production: 16400 kWh  
Orientation: South East





# Conclusion:

- Important to match to the building
- Utilising passiv solar = sunspaces
- Integrated PV, PVT
- Office & laboratories retrofitting
- Biomass based CHP
- Online monitoring
- Microgrid



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***Thank you for the attention!***

Dr. Matolcsy Károly  
Director of ÉMI Knowledge Centre

[www.emi.hu](http://www.emi.hu)

E-mail: [kmatolcsy@emi.hu](mailto:kmatolcsy@emi.hu)

Telefon: +36-30-966-0951

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