



Bioclimatic design of offices and renovation of housing Szentendre/Hungary



PIME's Conference
VITORIA/GASTEIZ 14.11. 2014.

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Director of ÉMI Knowledge Centre
PIMES Local Coordinator.



PIME'S receives funding from the
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Programme under Grant
Agreement No 239288



Formal experience: Green Solar Cities Salzburg



- **Brownfield project**
- **Quality ag**
- **Solar ther**
- **Passive ho**
- **New build**
- **Public acc**
- **Monitorin**



Előzmények: Green Solar Cities Copenhagen

- **Formal R&D projects**
- **VALBY 2025: 300 000 m2 PV**
- **15 % of electricity from solar**
- **Brownfield area: Carlsberg**
- **Building integrated PV**
- **CHP on biomass**
- **Energy+, Energy++ building**
- **New and retrofiting**
- **PV cooperative**



Staccato Faluház



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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

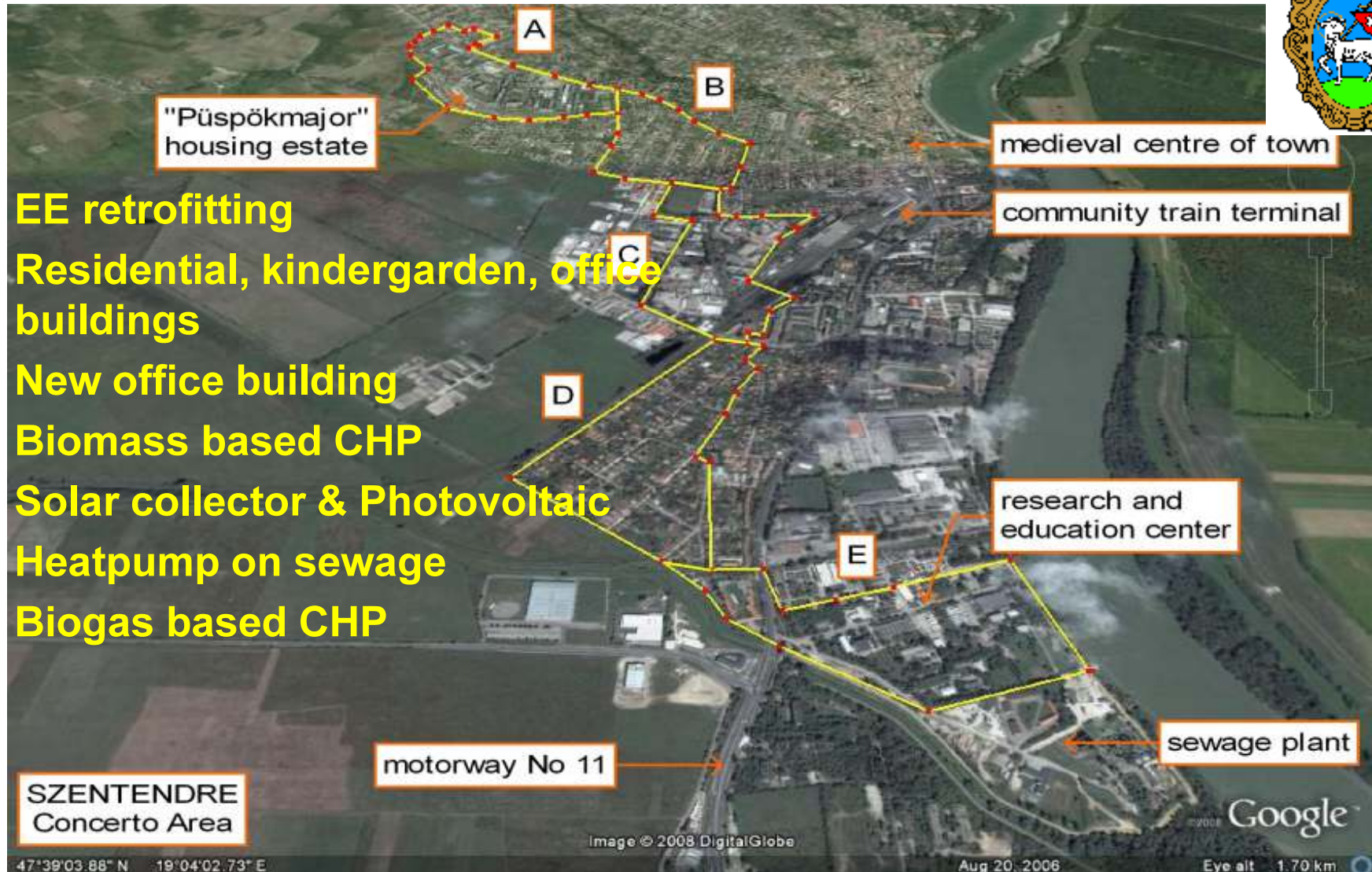
Efficient cost reduction



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PIMES CONCERTO area Szentendrén



EE retrofitting
Residential, kindergarden, office buildings
New office building
Biomass based CHP
Solar collector & Photovoltaic
Heatpump on sewage
Biogas based CHP

Püspökmajor: Hamvas Béla utcai residential retrofitting



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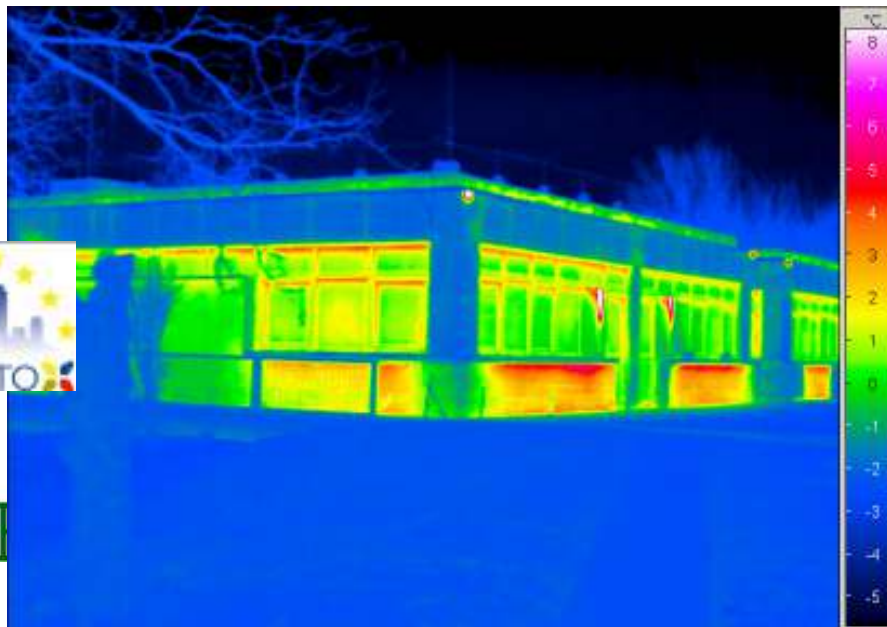


Püspökmajor residential retrofitting „English houses”



Püspökmajor kindergarden retrofitting

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



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Püspökmajori kindergarden PIMES retrofitting : Footing-roofing-sunspace



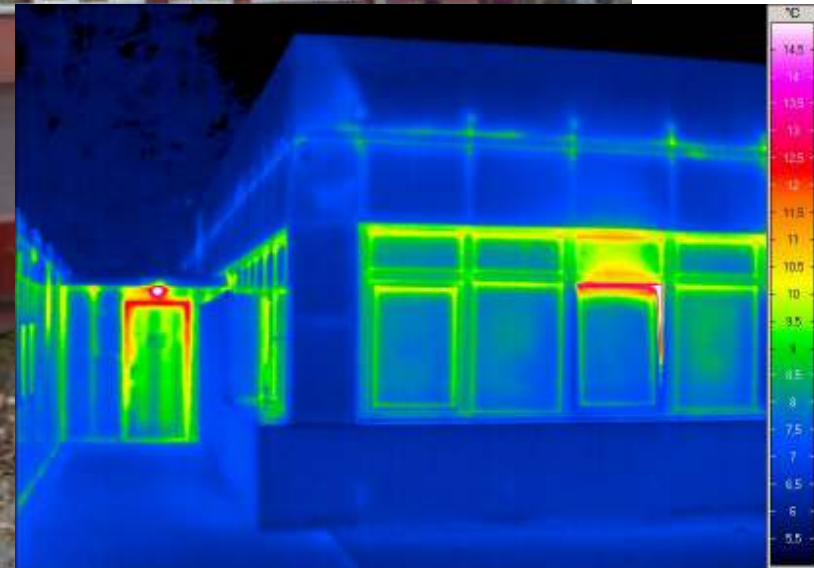
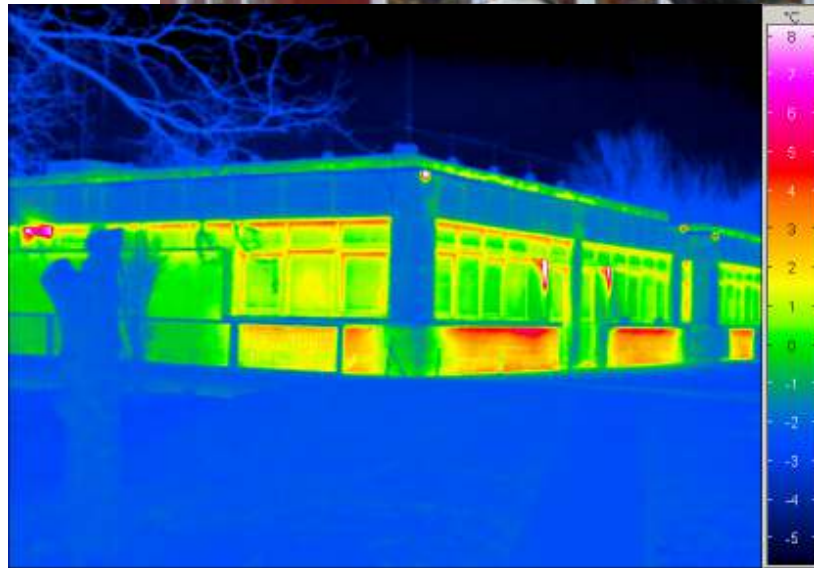
PIMES retrofitting : New attic wall with recycled cellulose



PIMES retrofitting : new roof, green roof



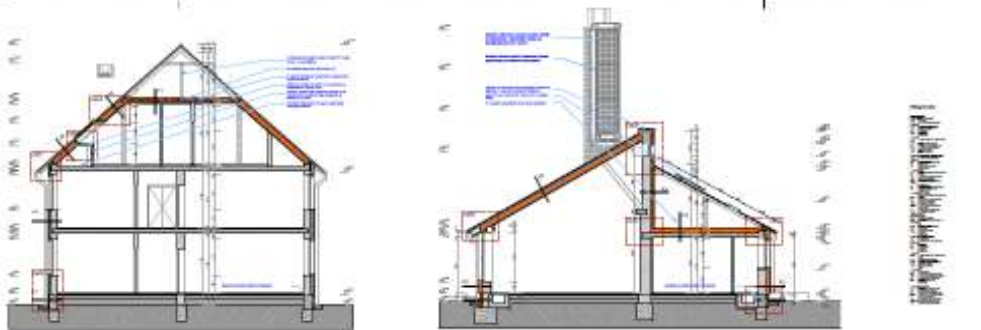
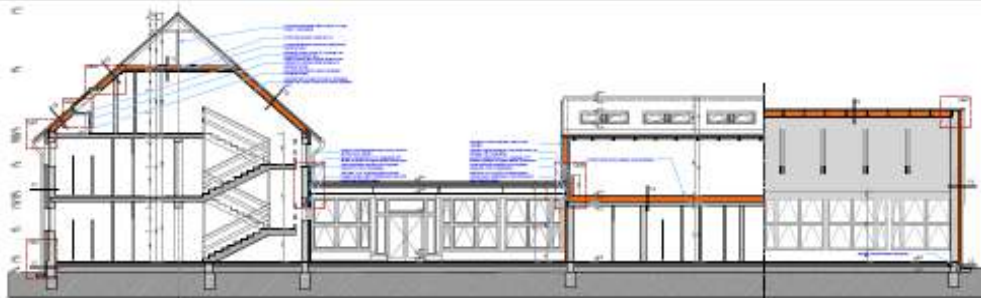
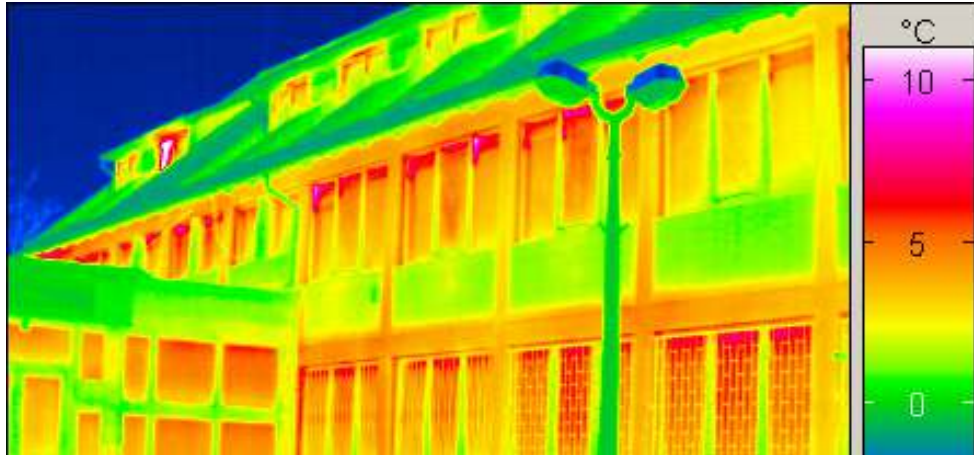
Püspökmajori kidergarden PIMES retrofitting



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



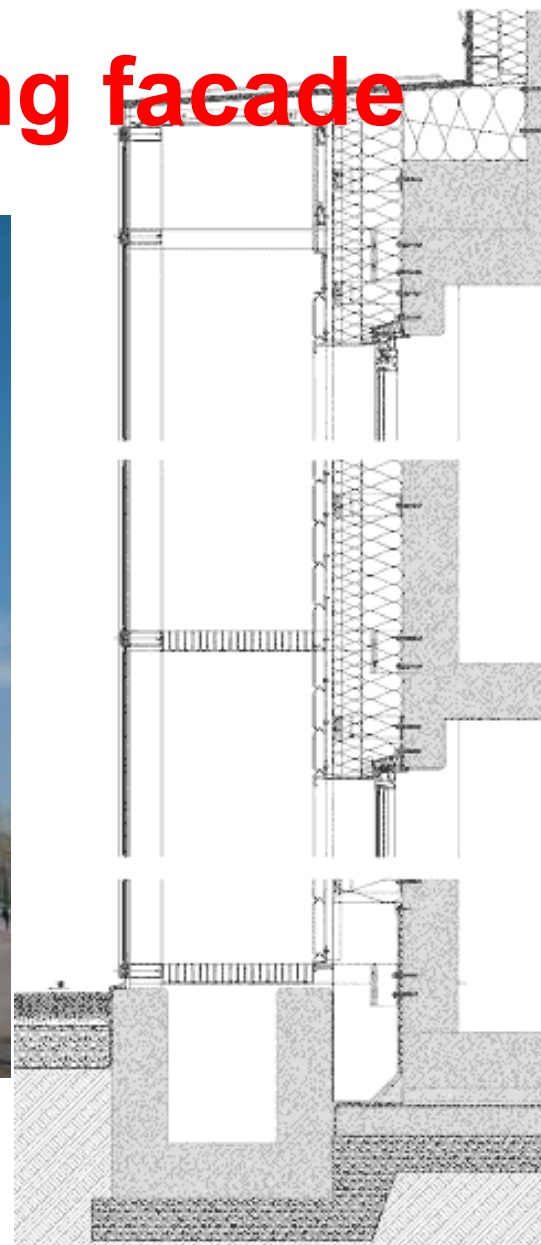
VSZ Zrt biomass based CHP



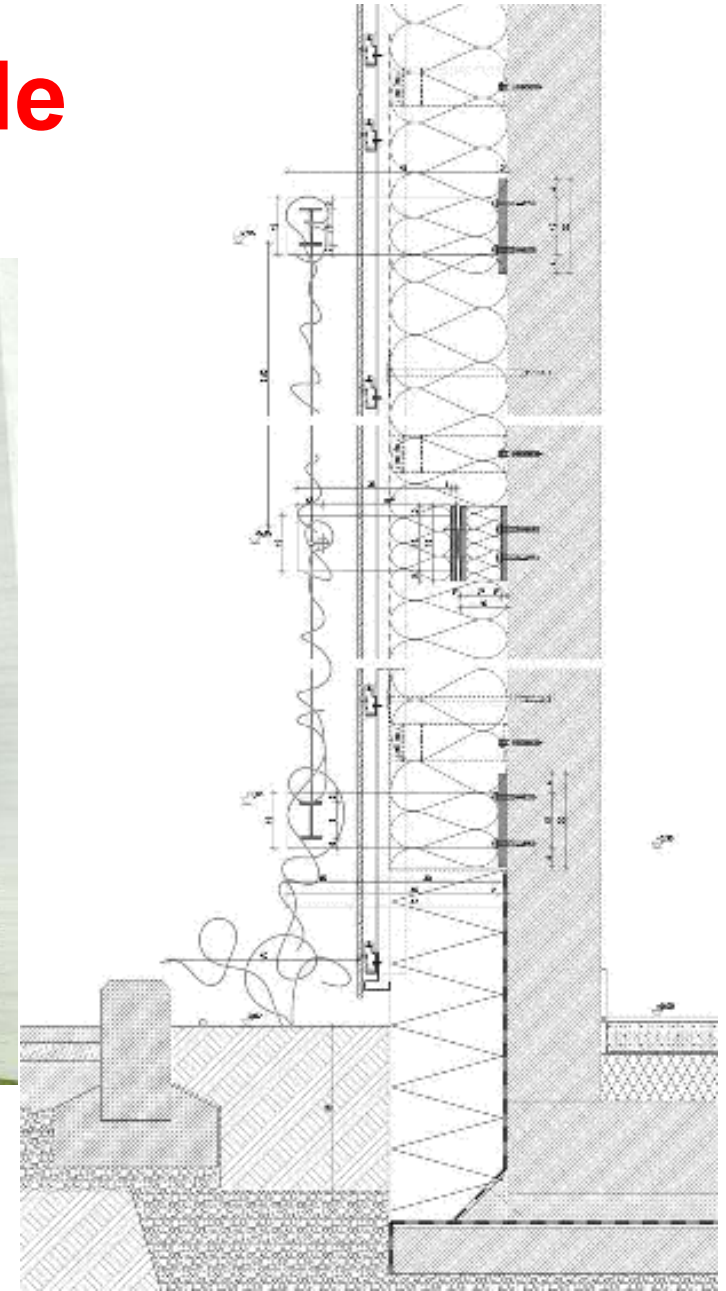
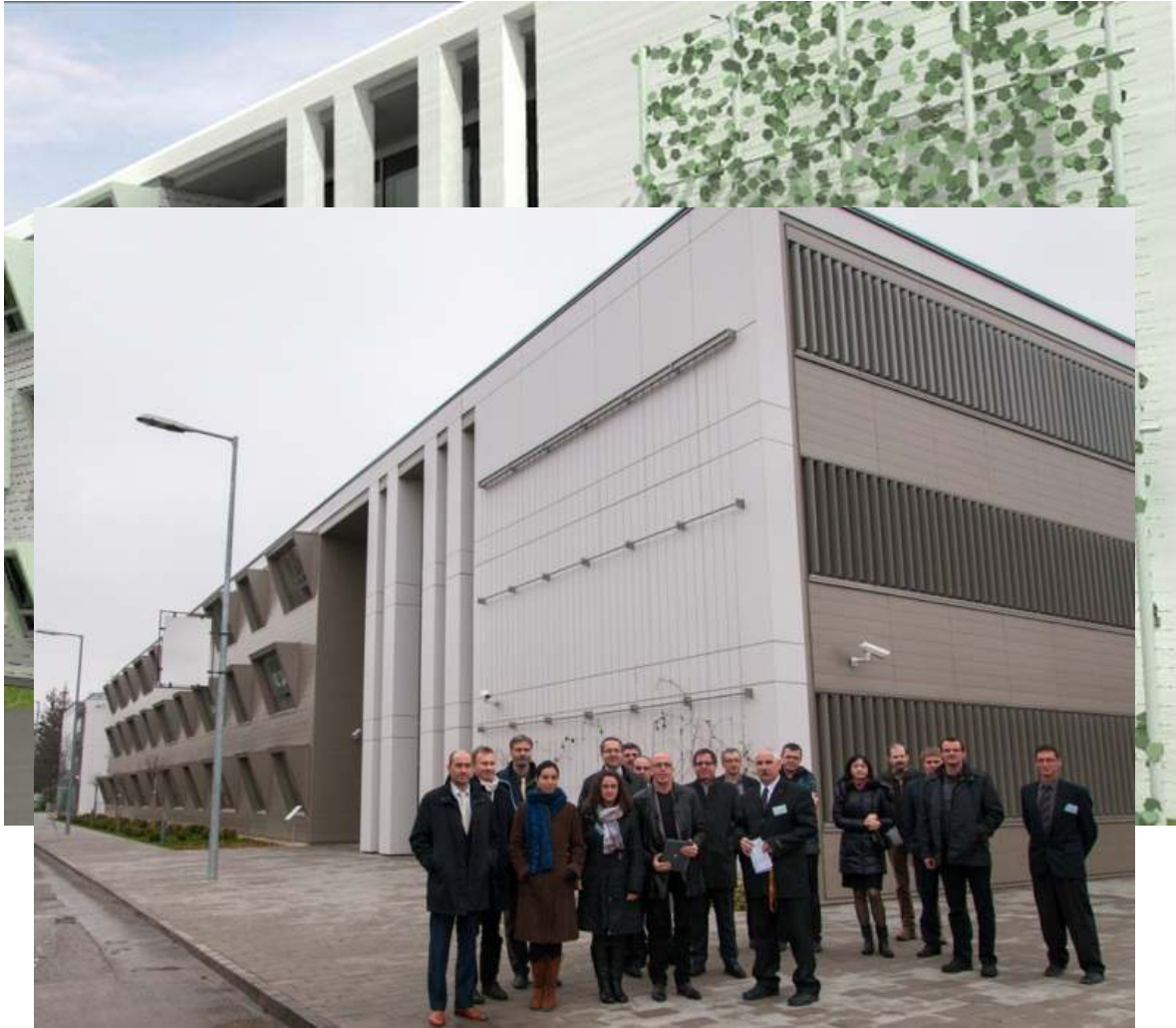
ÉMI new office building



Ventillated double glazing facade



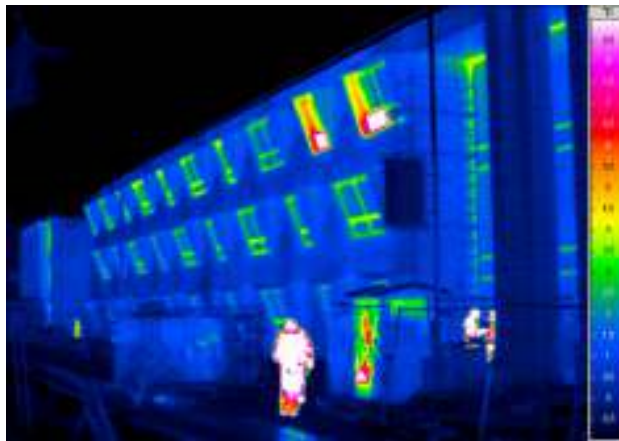
Green facade



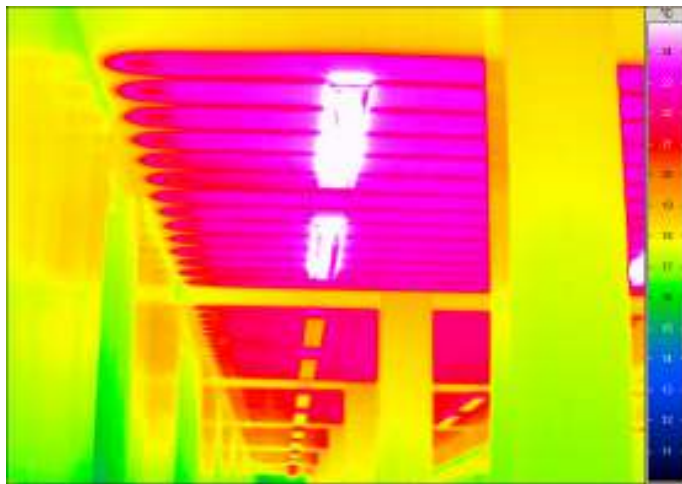
Summer shading



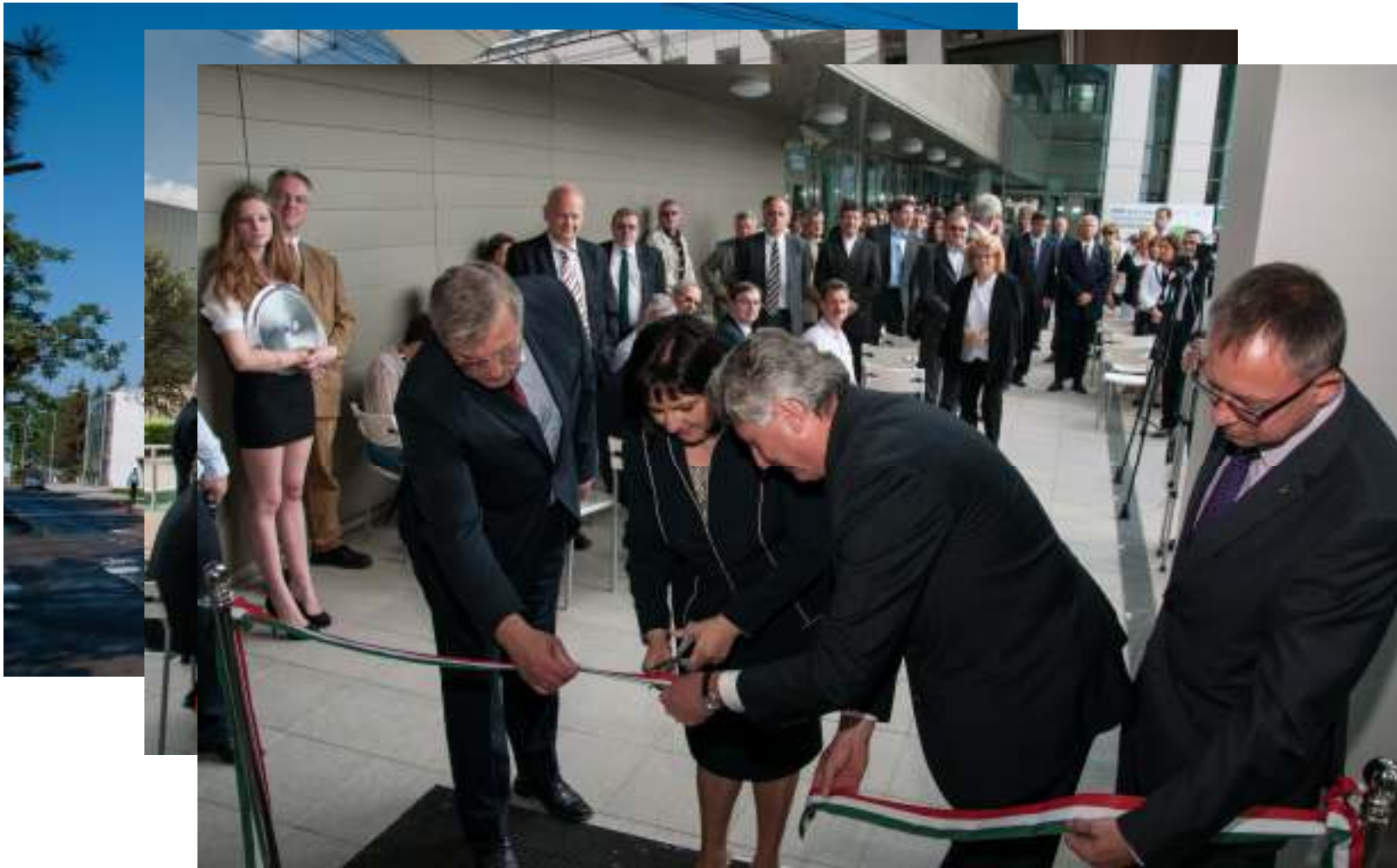
Recycled thermal insulation



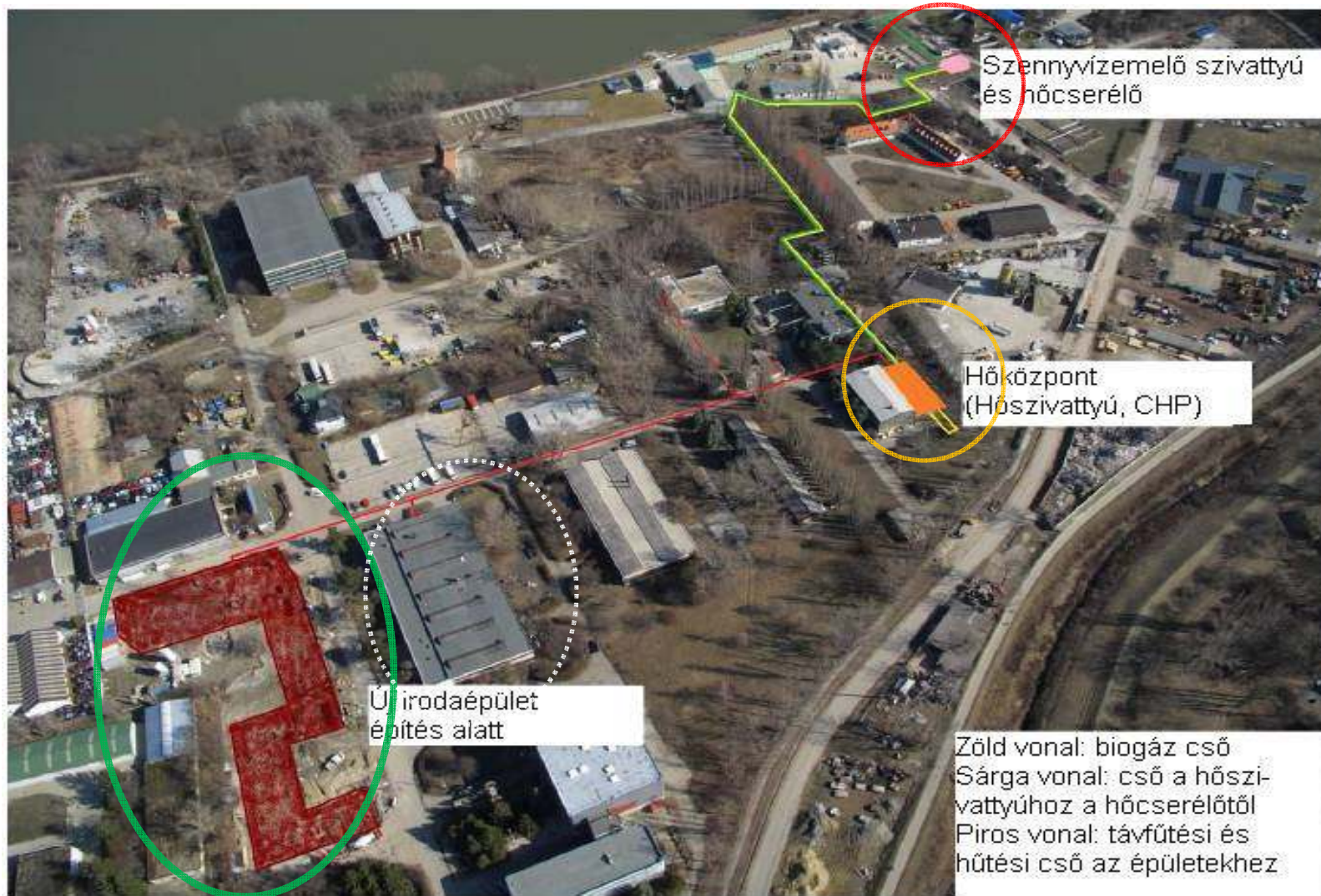
Low temperature heating and cooling



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 m²

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!

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