

EU-GUGLE

Affordable refurbishment and
comfort - experiences with
innovative financing models

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Aachen

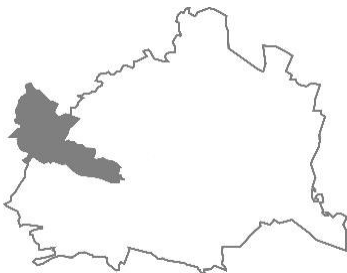
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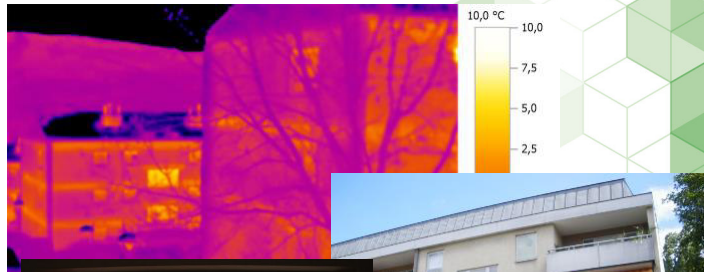
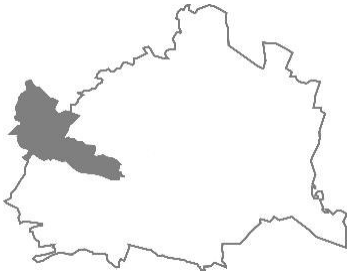
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VIENNA and its smart district



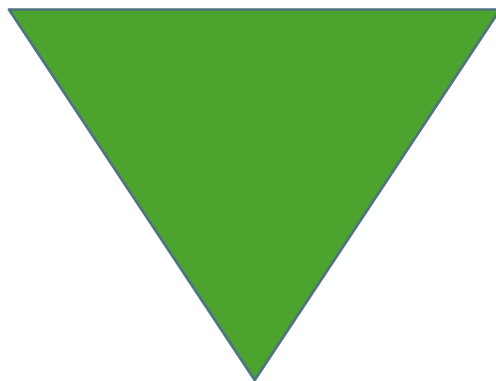
VIENNA and its smart district



The Starting Point



- Turn around the pyramid



Case study 1



- Challenge is the cap of €1.50/m² additional monthly rent over 10 years.
- Considering energy poverty.
- Participatory actions to involve the tenants together with social forum (Wohnpartner).



Case study 1



- Open market value is not of relevance.
- Pooling is possible, but not practiced.
- Refurbishing is political.



Case study 2



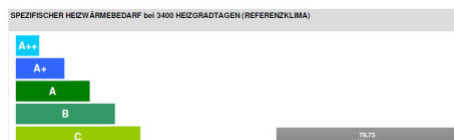
- Redensification - additional attic apartments (26) on top with:
 - Natural gas boiler (Central heating system) (135 kW).
 - Low temperature underfloor heating system (40 °C) individually controlled.
- Mixed model of tenants and new flat owners.



Case study 2



- Minimization of heat losses, insulated envelope with $U = 0.19 \text{ W/(m}^2\text{K)}$.
- Installation of new windows with $U = 1.2 - 1.3 \text{ W/(m}^2\text{K)}$.
- Insulation of the cellar $U = 0.19 \text{ W/(m}^2\text{K)}$.



Case study 2



- Nogging piece with insulation of the roof ($U = 0,17 \text{ W/(m}^2\text{K)}$).
- Energy-efficient elevators.
- Communication flow / quality assurance debates on weekly meetings.



Case study 2



- Step-by step realisation of the energy efficiency measures have been completed in August 2014.
- Distribution and intermediation among all involved parties.



Case study 2



- Few building users complain particular delays and disturbances - satisfied as requested damages in the construction were repaired.



11

Case study 2



12

Effizienzklassen	Klassengrenzen	Bestand	Sanierung
	[kWh/m ² a]	[kWh/m ² a]	[kWh/m ² a]
niedriger Heizwärmebedarf			
A++	$H_{WB,ref,iel} \leq 10 \text{ kWh/m}^2\text{a}$		
A+	$H_{WB,ref,iel} \leq 15 \text{ kWh/m}^2\text{a}$		
A	$H_{WB,ref,iel} \leq 25 \text{ kWh/m}^2\text{a}$		
B	$H_{WB,ref,iel} \leq 50 \text{ kWh/m}^2\text{a}$		26,45

Conclusions

- Nearly Zero Energy Building design requires good communication.
- Knowing legal frame, promotion schemes and good practice will not eliminate all missteps.
- Establishing the necessary skill in EU-GUGLE and beyond is our goal.



Contact

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