

TAMPERE | Tammella district

30.000 m² of floor area

400 dwellings

560 inhabitants

40% energy savings

Tampere has 215,168 inhabitants, the Central Region Tampere has 360,681 inhabitants and the Tammella district, where the renovations took place, has 6,337 inhabitants. The age distribution of Tammella is mostly elderly people, young couples and students. 94 % of the inhabitants are between 18 and 85 and only 6 % between 0 and 17. Decision making in the privately owned limited liability housing companies can be challenging because of the lack of interest in doing big renovations and the lack of funds. Tammella district is also a demonstration area for infill development. Additionally, there are several projects that are trying to help and encourage the limited liability housing companies in the area to use infill development as a means of funding renovations and improving the quality of living.

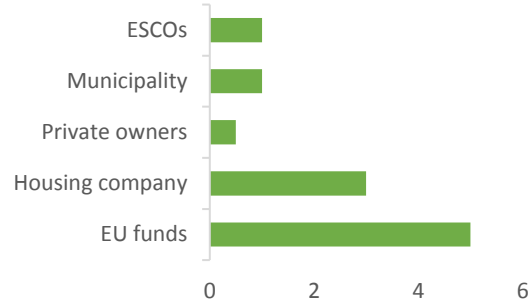


Total Investment*
Around 8 Million €

*Costs are based on different actual and calculated costs shifted to the comparison year 2014-2016 with the construction cost index. Costs of BEST 8 roughly estimated.



EU-GUGLE stands for “European cities serving as Green Urban Gate towards Leadership in sustainable Energy” and is funded under the 7th Framework Programme for Research and Technological Innovation. It is co-ordinated by CENER, Spain’s National Centre for Renewable Energies.



Demo 1 - Limited liability housing company Itsenäisydenkatu 15

Characteristics	Residential block of flats built in 1961. Total area 1 960 m ² .	
Legal structure	Building and building site is owned by the shareholders (mostly residents) who form the limited liability housing company.	
Financing model	12 % EU-grant + 4 % national subsidy + 84 % Bank Loan	
Energy consumption	291 > 120 kWh/m ² /a	Primary energy savings estimated: -59 %
Measures implemented	<i>Facades U value 0,2 (additional insulation 200 mm)</i> <i>Windows U value 1</i> <i>District heating; central heating; LED lighting with presence control</i> <i>Heat recovery and exhaust air heat pump, 17 kW</i> <i>Renewables in district heat production 38 %</i> <i>Renewables in grid electricity 25 %</i> <i>Remote monitoring system and smart metering by utility company</i> Renovation was completed in November 2015.	

Demo 2 - Limited liability housing company Kaupinpiirtti

Characteristics	Residential block of flats built in 1968. Total area 3 693 m ² .	
Legal structure	Building and building site is owned by the shareholders (mostly residents) who form the limited liability housing company.	
Financing model	10 % EU-grant + 90 % Bank Loan	
Energy consumption	193 > 92 kWh/m ² /a	Primary energy savings estimated: -52 %
Measures implemented	<i>Additional insulation; new skin; new supply air windows U value 0,8 W/m²K; façade U=0,21 W/m²K</i> <i>District heating; central heating; LED lighting with presence control</i> <i>Exhaust air heat pump 40kW</i> <i>Renewables in district heat production 38 %</i> <i>Renewables in grid electricity 25 %</i> <i>Remote monitoring system. Smart metering by utility company</i> Renovation will be carried through in 2016.	



Demo 3 - Limited liability housing company Tammelankulma	
Characteristics	Residential block of flats built in 1970. Total area 5 395 m ² .
Legal structure	Building and building site is owned by the shareholders (mostly residents) who form the limited liability housing company.
Financing model	13 % EU-grant + 1 % national subsidy + 86 % Bank Loan
Energy consumption	220 > 90 kWh/m ² /a Primary energy savings estimated: -59 %
Measures implemented	<p><i>Only solid facades have got additional insulation (+ 70 mm). New windows U value 1,4</i></p> <p><i>District heating; improvements within central heating; LED lighting; water saving faucets</i></p> <p><i>Exhaust air heat pump 40 kW</i></p> <p><i>Recycled waste air</i></p> <p><i>Renewables in district heat production 38 %</i></p> <p><i>Renewables in grid electricity 25 %</i></p> <p><i>Remote monitoring system. Smart metering by utility company</i></p> <p>Renovation was completed in November 2014.</p>

Demo 4 - Limited liability housing company Ainonkatu 2	
Characteristics	Residential block of flats built in 1971. Total area 5 554 m ² .
Legal structure	Building and building site is owned by the shareholders (mostly residents) who form the limited liability housing company.
Financing model	16 % EU-grant + 1 % national subsidy + 84 % Bank Loan
Energy consumption	191 > 90 kWh/m ² /a Primary energy savings estimated: -53 %
Measures implemented	<p><i>Windows U value 1</i></p> <p><i>LED lighting</i></p> <p><i>Exhaust air heat pump; 46 kW</i></p> <p><i>Renewables in district heat production 38%</i></p> <p><i>Renewables in grid electricity 25%</i></p> <p><i>Remote monitoring system; Smart metering by utility company</i></p> <p>Renovation will be completed in 2016.</p>

Demo 5 - Limited liability housing company Tammelanpuistokatu 31-33	
Characteristics	Residential block of flats built in 1974. Total area 2 488 m ² .
Legal structure	Building and building site is owned by the residents who form the limited liability housing company.
Financing model	40 % EU-grant + 60 % Bank Loan
Energy consumption	212 > 74 kWh/m ² /a Primary energy savings estimated: -65 %
Measures implemented	<p><i>New garage doors</i></p> <p><i>Heat recovery systems 10.1 kW and 14,4 kW</i></p> <p><i>Exhaust air heat pump 50 kW + 16 kW + 16 kW; COP 2-4</i></p> <p><i>LED lighting with presence control</i></p> <p><i>Renewables in district heat production 38 %</i></p> <p><i>Renewables in grid electricity 25 %</i></p> <p><i>Remote monitoring system. Smart metering by utility company</i></p> <p>Renovation was completed in the autumn 2015.</p>



Demo 6 - Limited liability housing company Torinnaapuri	
Characteristics	Residential block of flats built in 1978. Total area 3 024 m ² .
Legal structure	Building and building site is owned by the shareholders (mostly residents) who form the limited liability housing company.
Financing model	30 % EU-grant + 70 % Bank Loan
Energy consumption	166 > 78 kWh/m ² /a Primary energy savings estimated: -53%
Measures implemented	<i>Additional insulation U value 0,23 and rendering</i> <i>Windows U value 0,8</i> <i>District heating; central heating;</i> <i>real time remote monitoring</i> <i>Exhaust air heat pumps 40 kW</i> <i>In district heat production 38 %</i> <i>In grid electricity 25 %</i> <i>Remote monitoring system.</i> <i>Smart metering by utility company (district heat and electricity)</i> Renovation was completed in December 2014.

Demo 7 - Limited liability housing company Tampereen Pohjolankatu 18-20	
Characteristics	Residential block of flats built in 1980. Total area 4 117 m ² .
Legal structure	Building and building site is owned by the shareholders (mostly residents) who form the limited liability housing company.
Financing model	19 % EU-grant + 6 % national subsidy + 75 % Bank Loan
Energy consumption	172 > 57 kWh/m ² /a Primary energy savings estimated: -67 %
Measures implemented	<i>New windows and doors (U value 1)</i> <i>District heating; central heating; LED lighting with presence control;</i> <i>water saving faucets</i> <i>Exhaust air heat pumps 60 kW</i> <i>Solar collectors 10 m²</i> <i>Renewables in district heat production 38%</i> <i>Renewables in grid energy 25%</i> <i>Remote monitoring system.</i> <i>Smart metering by utility company (district heat and electricity)</i> Renovation was completed in June 2014.



Demo 8 - Limited liability housing company Tampereen Tapio	
Characteristics	Residential block of flats built in 1973. Total area 6 060 m ² .
Legal structure	Building and building site is owned by the shareholders (mostly residents) who form the limited liability housing company.
Financing model	N/A <i>Bank loan; EU Grant; National subsidy</i>
Energy consumption	223 > 86 kWh/m ² /a Primary energy savings estimated: 61 %
Measures implemented	<i>New windows U value 1 and doors; additional insulation and rendering Led lighting with presence control Exhaust air heat pump Renewables in district heat production 38% Renewables in grid electricity 25% Remote monitoring system. Smart metering by utility company (district heat and electricity) Renovation will be completed in 2016.</i>

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