

Goals from Sparebank 1

- **Energy targets**
 - **Net energy demand according to NS**
 $3031 < 100 \text{ kWh/m}^2$
 - **Measured delivered energy $< 85 \text{ kWh/m}^2$**
- **Indoor climate**
 - **"The best indoor climate in the country"**

Building data

Envelope element	U-value / g-value
Glass facades and windows (triple panes)	0.70 W/m ² K / 0.5
External walls, 300 mm mineral wool	0.13 W/m ² K
External roof, 400 mm insulation	0.10 W/m ² K
Windows facing atrium	5.20 W/m ² K / 0.8

- Heat recovery temperature efficiency: 85 %
- Optimized window area (defined by daylighting requirement)
- External solar shading on all windows (and partly in atria)
- Very strict air tightness requirements ($n_{50} < 1.0 \text{ h}^{-1}$)

Technical solutions

- Demand Control ventilation with high efficient heat recovery and low energy fans
- Heat recovery from technical cooling
- Water chillers with free-cooling system
- Low energy lighting and equipment
- Advanced building automation and management system

Indorclimate control

- Demand control of air volume based upon Temperature and CO2 sensors
- Lower outside air temperatures at night used to cool thermal mass
- mechanical cooling in ventilation systems on demand
- Room heating via air and radiators

