



Photo: NEUBAU best.energy



## TechnoDom

### Karaganda, Kazakhstan

The electronics retail store with parking spaces on the ground floor of the company "TechnoDom" is a special project, because it is located in an extremely cold climate zone (-35/+34) and is the first building in the city not to have a state district heating connection, although it is located in the center of Karaganda. Karaganda is a well-known place for the Kazakh coal industry.

With this project, the client Eduard Kim (founder and owner of TechnoDom AG) and NEUBAU best.energy wanted to realize a lighthouse project and prove that business buildings (electrical trade) can also achieve the highest efficiency. Compared to a standard Kazakh shopping center of this size, TechnoDom saves 645 tons of CO<sub>2</sub> per year. At the opening on 17.02.2022 at -21°C outside temperature in Karaganda, TechnoDom was sufficiently heated due to the optimized building envelope with internal heat sources (customers and equipment).

Heating and cooling is provided by a probe array with 41 deep probes with the length of 80 to 100 meters and two cascaded heat pumps. Electricity is produced by the PV system on the roof with the power of 253kWp and covers about 73 % of the own annual demand.

## Companies involved

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### Client

- Eduard Kim

### General planning, energy planning, quality assurance

- NEUBAU best.energy David Michulec

### Construction

- Implementation on site: Weissenseer JV OST GmbH
- Photovoltaics: Kärnten Solar

### Building services

- Stiebel Eltron

### Ventilation system

- Hydraulics: BPS-Engineering
- Control technology: DP-Regeltechnik
- Ventilation units: Weger Walter GmbH

## Facts

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### Electronics retail store

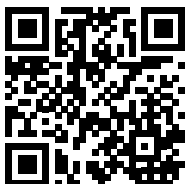
Completed in 2022. Area: 2487.6 m<sup>2</sup>

### Energy and environmental aspects

- Heating and cooling is provided by a probe field with 41 deep probes with the length of 80 to 100 m and two cascaded heat pumps
- PV system with an output of 253 kWp covers approx. 73 % of the annual demand
- Solid construction

### Characteristics

- Blower Door Test: n50 = 0,6/h
- Heating energy demand 22 kWh/m<sup>2</sup>a calculated according to PHPP
- PER demand 212 kWh/m<sup>2</sup>a calculated according to PHPP



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