

Heat Pump Awards 2026

Application submission

SGGW – Educational and Research Buildings

Panasonic | Building Solutions Award

1. Application overview

Award category	Building Solutions
Title of the project	SGGW – Educational and Research Buildings
Organisation Name	Panasonic
Exact address of the project	SGGW University, Warsaw, Nowoursynowska 159
Funding	Public
Organisations involved in the project	Polonez Plus Alde Sp. z o.o.
Project ending date	01/04/2026
Project website	No answer provided.
Sector of application	Commercial

2. Applicant & EHPA contact details

Full name	Błażej Bukato
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Phone number	48698319487
EHPA member involved	None
Role of EHPA member	None

3. Project description and benefits

Project description (goal, problem addressed, and solution provided by the heat pump)

The objective was to provide heating and cooling for lecture rooms and food technology laboratory rooms. Panasonic ECO-i air-to-air heat pumps were used for heating and air conditioning in teaching rooms, laboratory rooms and common areas. Fresh-air preheating is provided through cooperation between ventilation air-handling units and Panasonic condensing units. An additional user benefit is improved air quality provided by nanoe™ X generators in the VRF indoor units.

Expected or achieved benefits

The project provides year-round heating and cooling with precise zone control, improving thermal comfort in lecture rooms, laboratories and common areas. The high-efficiency VRF

system helps reduce energy consumption, operating costs and CO₂ emissions, while nanoe™ X technology supports improved indoor air quality. The system also enables efficient integration with ventilation and central building management systems.

Obstacles/barriers encountered during development

The greatest challenge was coordinating HVAC installations in a large complex of educational and research buildings with diverse functions. Appropriate operating parameters had to be ensured both for lecture rooms with variable loads and laboratories requiring stable environmental conditions. An additional challenge was integrating the VRF systems with ventilation air-handling units while maintaining high energy efficiency across a large number of air-conditioning zones.

Why should this project win an award?

This project stands out for its scale and complexity: a 1.2 MW Panasonic VRF system provides heating and cooling across a large university campus, while integrating ventilation, BMS control and nanoe™ X air-quality technology. It demonstrates how one intelligent HVAC solution can deliver comfort, energy efficiency and improved indoor air quality across diverse educational and laboratory spaces.

4. Technical specifications

Capacity of unit(s)	ECOi EX 28–56 kW (U-8-20ME2E8), Mini ECOi 12.1–28 kW (U-4-6LE2E8; U-8-10LE1E8); indoor units 1.5–14 kW (S-_MU2E5C); total cooling capacity of installed outdoor units: 1.2 MW
Energy sources used	Ambient air and electricity.
Coefficient of Performance (COP)	Mini ECOi SCOP: 4.24–4.87; ECOi: 4.09–4.79
Service provided	Heating, cooling and cooperation with ventilation air-handling units.
Refrigerant type	R410A

Heat pump details (compressor technology, heat exchanger, system configuration)

The project uses Panasonic ECOi EX and Mini ECOi air-to-air heat pump systems based on VRF technology. The outdoor units use inverter-driven Twin Rotary compressors, enabling continuous modulation of heating and cooling capacity according to the building load. The systems use R410A refrigerant for the specified ME2 and LE1 models. The heat exchangers are air-to-refrigerant outdoor heat exchangers with corrosion-resistant Bluefin coating. The systems are single-stage VRF configurations, with multiple outdoor units connected in parallel where required to provide the total system capacity. The installation is not configured as a two-stage system.

5. Renewable energy integration and grid response

Integration of renewable energy sources

No answer provided.

Response to energy demand / smart grid integration

The system automatically adjusts the output to the building's current load.

The Panasonic ECOi EX units utilised feature the VET (Variable Evaporating Temperature) function, which dynamically adjusts the refrigerant's evaporation temperature to the building's current load. This solution increases the system's seasonal efficiency, reduces electricity consumption and maintains a high level of user comfort under the variable load conditions typical of educational establishments.

6. Innovation, monitoring and replicability

General (all awards)

Why the project is innovative *(all awards)*

The project's innovation lies in combining the Panasonic ECOi EX VRF system with VET, BMS/BACnet integration, cooperation with ventilation air-handling units and nanoe™ X technology. The solution provides high energy efficiency, intelligent energy management and improved air quality in one of the largest educational facilities implemented by Panasonic in Poland.

Monitoring approach (performance, cost, and carbon targets) *(all awards)*

No answer provided.

For Innovation Award

Technology/technique developed solely for this project *(Innovation Award only)*

No answer provided.

Differentiation from state-of-the-art solutions & market maturity *(Innovation Award only)*

No answer provided.

Regional benefits (energy savings, emissions, jobs, infrastructure) *(Innovation Award only)*

No answer provided.

Commercial potential *(Innovation Award only)*

No answer provided.

For Large Heat Pump or Building Solutions Award

Why the project serves as a model for others *(Large Heat Pump or Building Solutions Award)*

The project is an example of a scalable solution that can be expanded both within SGGW's existing facilities and in future educational, laboratory or administrative buildings.

Potential for expansion to other locations/industries *(Large Heat Pump or Building Solutions Award)*

Similar systems can be successfully used in:

- universities and schools,

- research laboratories and science centres,
- office buildings and business campuses,
- hospitals and healthcare facilities,
- public administration buildings,
- hotels and conference facilities,
- libraries, museums and cultural centres,
- buildings combining office, educational and service functions.

Barriers to replication elsewhere *(Large Heat Pump or Building Solutions Award)*

No answer provided.

Business opportunities for expansion, licensing, or commercial production *(Large Heat Pump or Building Solutions Award)*

No answer provided.