



Photo: Yasutake Kojima



Seoul Photographic Art Museum

Seoul, Republic of Korea

The first official museum for photographic art in Korea is not only an impressive example of architectural and cultural cooperation at the highest level, it also sets milestones for energy efficiency in museum construction. With state-of-the-art building technology and a comprehensive energy concept, the building focuses on sustainability and climate protection despite high demands, e.g. the need for high-precision climate zones (including temperature- and humidity-sensitive storage rooms).

Over 54 deep probes provide geothermal energy and heat or cool the building as required. An inter-seasonal geothermal storage facility is used for temporary energy storage. The green roof is covered with PV modules, and batteries store the energy generated. The façade consists of recycled lightweight concrete hollow elements. The thermal mass of the building acts as a buffer storage for slow temperature equalisation. The horizontal aluminium panels of the façade change their appearance depending on the incidence of light and the viewing angle, while also serving as a heat shield.

The interplay of all these factors with passive cooling and sophisticated building technology enables the demanding museum operations to be carried out in a virtually climate-neutral building.

Companies involved

Architecture

- JADRIC ARCHITEKTUR & 1990uao –
Architekten Mladen Jadrić & Yoon GeunJu

Facts

Museum

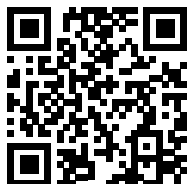
- Completed 2024
- Area: 7,048.52 m²

Characteristics

- CO₂ emissions: 17.1 kg/m²a
- Primary energy requirement: 131.6 kWh/m²a

Energy and environmental aspects

- Geothermal energy for energy generation
- Geothermal storage as inter-seasonal buffer storage
- Green roof with photovoltaics
- Recycled lightweight concrete elements
- Passive ventilation concept to reduce mechanical ventilation and cooling systems



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