



Powerhouse Brattørkaia reaches a maximum height of 39.3 m (129 ft) Ivar Kvaal

Snøhetta has already proven itself adept at green design with projects like the [ZEB Pilot House](#), but this new building is arguably its most sustainable to date. Hailed by the firm as the world's northernmost energy-positive building, Powerhouse Brattørkaia produces more than twice the electricity it requires per day.

Powerhouse Brattørkaia is located in Trondheim, Norway, and measures 18,000 sq m (193,750 sq ft). The building is clad in black aluminum panels and at its center is a large oval void that contains a garden. The interior's ground floor hosts a cafe and visitor center, and the rest of the available floorspace is given over to offices.

Its location and layout was carefully chosen to offer maximum exposure to the sun, and its pentagonal roof and the upper part of its facade is covered in 3,000 sq m (roughly 32,000 sq ft) of solar panels. These produce approximately 500,000 kWh of electricity over a year, which works out as more than twice as much as it requires per day.



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"Energy-positive buildings are the buildings of the future," says Snøhetta founder Kjetil Trædal Thorsen. "The mantra of the design industry should not be 'form follows function' but 'form follows environment'. This means that the design thinking of today should focus on environmental considerations and reducing our footprint first, and have the design follow this premise."

Other notable sustainable elements include excellent insulation and heat recovery ventilation systems, which help maintain a comfortable temperature. A [heat pump system](#) is also installed and makes use of the nearby fjord's seawater for efficient heating and cooling, while rainwater is collected for toilet flushing. Artificial light is kept at a minimum with generous

glazing and motion sensors that ensure the LED bulbs only shine when a room is in use, while a sophisticated monitoring system keeps track of overall power usage.

Powerhouse Brattørkaia's interior is mostly given over to office space Ivar Kvaal
Additionally, a Snøhetta representative told us that work is ongoing to develop a system of batteries that can store excess electricity produced during summer when there is plenty of daylight. The stored electricity would then be used during winter when much of the day is dark. The building also supplies excess energy to neighboring buildings and electric vehicles.

Powerhouse Brattørkaia received a BREEAM Outstanding certification, which is the highest ranking by the [green building standard](#) . The project also involved collaborators Entra, Skanska, ZERO, and Aslpan Viak.

Source: -- [Snøhetta](#)

-- <https://newatlas.com/architecture/powerhouse-brattorkaia-snohetta/>