

THE VOLDSLØKKA DEMONSTRATION SITE



Overview of the Voldsløkka school and cultural area
Photo credit: Spinn Arkitekter AS & Kontur Arkitekter AS

At first glance, Voldsløkka school and cultural station look like a modern school nestled into a green part of Oslo. But behind its walls, rooftops, and schoolyard lies something far more ambitious: a demonstration of how buildings, communities, and climate action can come together.

Located in the Sagene district in Oslo, the Voldsløkka school and culture center project includes the construction of two new buildings and the careful renovation of the listed Heidenreich building. The new buildings host a secondary school for 810 pupils, together with a culture hall, dance hall, and rehearsal spaces. A separate sports centre is currently in the planning phase.

What makes Voldsløkka truly stand out is its environmental ambition. The school is Oslo's first plus-energy school, producing more energy than it uses over the year—including energy for appliances and plug loads. With 1,556 m² of photovoltaic panels and an estimated annual production of 192 MWh, the building is not only self-sufficient but contributes surplus energy back to the system.

“Voldsløkka is not just a school building – it is an active participant in the energy system.”

The project's ambition goes well beyond technical performance. From the earliest stages, Voldsløkka has been shaped as a place for learning, culture, and community life, where sustainability is experienced in everyday use.

Innovation

Innovation at Voldsløkka is not only about advanced systems—it is about making complexity understandable and inviting people into the process.

Learning spaces for climate awareness

Voldsløkka has established a Living Lab, where pupils take part in activities focused on energy transition and circularity. These include learning sessions, co-creation workshops, and exhibitions that invite the wider neighbourhood into the building.

Dedicated demo-spaces highlight technologies such as renewable energy, energy storage, and electric mobility, helping pupils and visitors understand how the energy transition works—and what role they play in it.

Seeing sustainability through AR and VR

To support better decision-making and engagement, Virtual Reality (VR) and Augmented Reality (AR) tools were used during the design and renovation process. These tools allow users to experience the school and its surroundings at full scale, exploring different scenarios related to energy use, circularity, and life-cycle impacts.



Landscape design of the school courtyard
Photo credit: Finn Ståle Felberg, Oslobygg KF



Facade made of BIPV and BAPV panels
Photo credit: Finn Ståle Felberg, Oslobygg KF

One of the first engagement activities used art as a gateway to sustainability.

Before the school opened, pupils from Bjølsen school participated in a three-day workshop on circularity and material reuse. Using recycled tiles, they created a large mosaic that is now permanently installed inside Voldsløkka school.

Climate Bootcamps: a research school in action

The largest Living Lab activity to date was the Climate Bootcamps, a two-day research school for the entire 10th grade.

Eighty pupils worked alongside researchers from SINTEF and NTNU to explore energy use at school and in their community. They collected data, conducted interviews, made measurements, and translated their findings into mood boards and presentations.

A schoolyard that manages rain—and tells a story

The design of the schoolyard is based on open, nature-based stormwater management, responding to increasing rainfall caused by climate change.

Instead of hiding infrastructure underground, rainwater flows visibly through channels into planted islands, where it is absorbed and stored below ground. Vegetation, permeable surfaces, and water become learning resources as well as technical solutions. The system demonstrates how climate adaptation, biodiversity, education, and aesthetics can coexist within a dense urban setting.

Circular design rooted in history

Existing structures and materials are preserved and reused wherever possible, retaining façades, architectural details, and even rediscovered heritage elements such as mason-signed stones.

New additions are designed for disassembly and future reuse, while materials are carefully selected to minimise emissions. In collaboration with Oslobygg, SINTEF, and NTNU, the project explores scenarios for using reused materials in the planned sports hall—analysing carbon footprint and life-cycle costs to inform future procurement strategies across Oslo.

A School That Teaches by Example

Voldsløkka school shows what is possible when climate ambition, innovation, and citizen engagement are developed together.

The project demonstrates that buildings can do more than reduce emissions—they can educate, inspire, and connect communities. By combining a plus-energy building, circular design, climate-adapted landscapes, and creative engagement methods, Voldsløkka becomes a place where sustainability is not just taught, but lived.

“Voldsløkka proves that the energy transition is not only about technology—it is about people.”