

# Groundbreaking Energy Positive Building in Norway >

The Powerhouse Alliance is a Norwegian collaboration for innovation in energy. They wanted to build a net zero energy smart building (Powerhouse Brattørkaia) that would serve as a leading example for the northern hemisphere: one that produces more energy than it consumes over its lifespan.

The aim of the project was threefold: to maximize the amount of clean energy produced by the building, to minimize the energy required to run it, and to serve as a pleasant space for its tenants and the general public.

In order to achieve their challenging goals, Powerhouse Brattørkaia evaluated every building system and leveraged a series of technologies including heat recovery systems, energy efficient appliances, and smart building management.

## Reducing Energy

In a typical commercial building, a huge amount of lighting energy is wasted. CoreSync dynamically controls 2000 luminaires based on schedules and real-time data from over 2500 sensors, preventing lights being used when they are not needed.

## PoE

Only a Power over Ethernet (PoE) based system was able to support the functionality required. In addition, Ethernet cable is much smaller and lighter than mains power cabling, reducing the amount of physical material required.

## Biodynamic Lighting

CoreSync automatically manages the color or “temperature” of the light to match the natural shifts of daylight. This is especially important in northerly regions like Trondheim, where long winter nights can significantly impact mental health.

## Switch shutdown

The CoreSync team developed a PoE switch shutdown feature specifically for this project. Nonessential switches power down when not likely to be in use, saving further energy. When full functionality is required, the relevant systems can switch on within seconds.

## BREEM Outstanding

Powerhouse Brattørkaia produces more than twice as much electricity as it needs. It has received the BREEM Outstanding certification, the highest possible ranking.