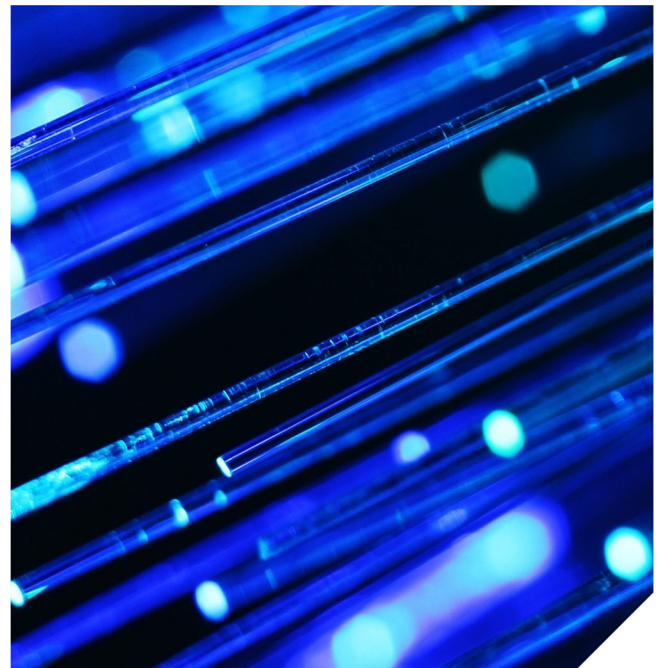
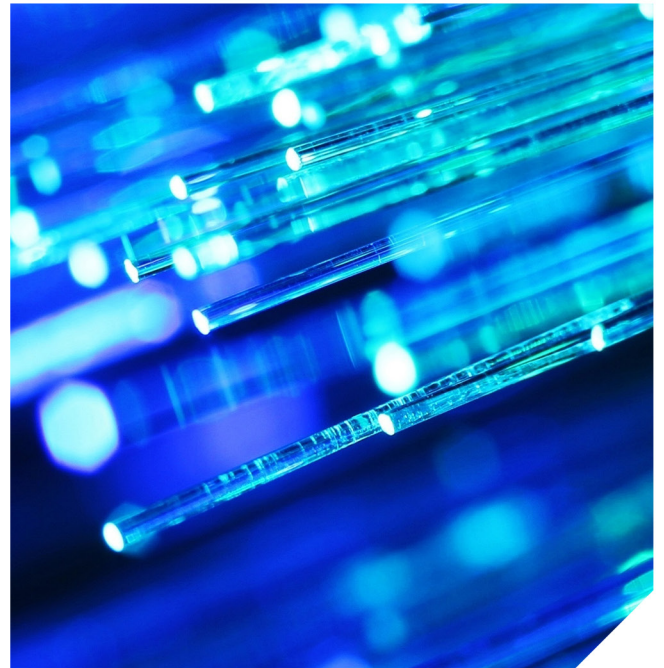


Coromatic

Operations  
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# Vattenfall

## Securing data and telecommunication





## CASE STUDY VATTENFALL

# Securing data and telecommunication

Vattenfall is one of Europe's largest electricity producers and, in 2014, had net revenues in excess of SEK 165 billion and more than 31,000 employees. The company produces electricity and heat from six types of energy: wind, nuclear, natural gas, biomass, coal and hydropower. Vattenfall is wholly owned by the Swedish state.

## Background

For many years, Vattenfall's head office has been located in Råcksta, outside of Stockholm, with two more offices in Stockholm itself. In 2009, a decision was taken to build a new head office to house the company's around 2,200 employees in the Stockholm area in Arenastaden in Solna, on the outskirts of Stockholm. The new head office comprises four buildings 8–14 stories high.

The new head office would function as the base for all of Vattenfall's operations and, accordingly, extremely high standards were set for availability and security, since the entire property is considered business critical. In addition, operations at Vattenfall's head office are critical for a number of public services.

Furthermore, Vattenfall's operations are characterized with sustainability and environmental awareness, which had to be reflected in the new head office. Vattenfall realized at an early stage that stable data

communications, telecoms, uninterrupted power supplies and emergency power comprised key functions for operations at the new head office. Given the above, Coromatic was contacted early in the planning phase for the new head office.

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**Challenge:** Coromatic's assignment was to advise, define requirements and implement all projects related to securing data and telecommunication availability at the new office premises.

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## Solution

Coromatic's assignment was to advise, define requirements and implement all projects related to securing data and telecommunication availability at the new office premises. The assignment was carried out in close consultation with Vattenfall, contractors, relocation consultants and the architects, and also included calculating the property's need for cooling solutions, uninterrupted power supplies and emergency power.

As before, the company's IT operations would be outsourced to two redundant data centers in the Stockholm area. However, a separate server room was going to be built in the new property for the company's electricity grid monitoring activities and for Vattenfall's trading activities linked to the Nordic power market, Nord Pool.

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Vattenfall is one of Europe's largest producers of electricity and, in 2014, had net revenues in excess of SEK 165 billion.

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In addition, Coromatic's assignment also comprised advising on and meeting Vattenfall's needs to satisfy the various operational requirements for availability and emergency power. For example, a decision was taken to build two crisis management centers with separate requirements for availability, just as was being implemented for the board room and other parts of operations related to nuclear power.

Together with all of the interested parties, Coromatic kicked off with exhaustive mapping and analysis of requirements. The requirements analysis revealed that power supply and cooling could be designed differently and thereby result in major savings. It was also clear that ducting and technology areas needed to be constructed differently to meet Vattenfall's requirements. This insight eliminated future delays and their associated costs.

The analysis led to an implementation plan that met all of Vattenfall's requirements for security, availability, budget and the environment. Within the framework of this exhaustive critical facilities project, Coromatic carried out the following components:

#### **Network infrastructure**

This was constructed to secure IT infrastructure availability throughout the property. The entire core network was built

with two fully redundant networks in all four buildings. This included drawing redundant black fiber for connection to the company's four data centers and drawing the core network via 43 main distribution frame rooms to each floor and then on to each user and network function.

By using a certified cable system, including certified personnel, from designers to technicians, Vattenfall received a 20-year guarantee for the entire network, from incoming black fiber to each individual network connection.

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#### **Telephony and wireless networks**

In conjunction with the move, Vattenfall decided to change to a GSM-based system. The challenge with environmentally certified buildings such as Vattenfall's head office, is that the walls are extremely well insulated thereby weakening the GSM signal.

This was solved by constructing a separate GSM network in the property with dedicated base stations and antennas on each floor to ensure mobile coverage throughout the buildings.

Furthermore, Coromatic designed and built a wireless network for the entire property. The GSM-based system that was built is used as a carrier to connect Vattenfall to Rakel — the stand-alone network used by the emergency services, police and other critical public services.

#### **Power supply**

Another key part of the IT infrastructure puzzle was the buildings' power supply, which comprised a combination of uninterrupted power supplies and diesel generators for emergency power. The power supply was made redundant in accordance with Vattenfall's availability requirements. Since needs for availability differed so dramatically out in operations, the power supply was designed with this in mind, thereby enabling the cost of emergency power to be reduced.

#### **Cooling**

An energy-efficient cooling system was installed in all spaces where it was required, for example, in the various

main distribution frame rooms and the solutions tailored to the particular cooling needs of the respective spaces.

### Server room

On the roof of the building, Coromatic also built a separate server room for monitoring the electricity grid and for Vattenfall's trading activities linked to Nord Pool. The room was delivered complete with cooling and power in accordance with the availability requirements for the space.

### Results

The entire process, from design and project engineering to installation and construction was implemented in parallel with other construction at the property.

At the occupancy date, all of the components were in place and the personnel could continue to work as normal. Throughout the construction period, Coromatic worked closely with Vattenfall, contractors, architects and relocation consultants to optimize and adjust solutions based on the constant changes that arise in such a construction project.

"During the construction of our new head office, Coromatic has been a safe partner to have to optimize power supply, network access and telephony," says Roger Ernlund, Project Manager at Vattenfall.

"In addition, throughout the process, they maintained focus on our very specific requirements for security, availability and cost control."



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Coromatic ensures that organizations can keep their business operations running without disruption. As the leading provider of Critical Facilities Solutions, such as data centers, we safeguard power and data communication supply.

