Data center district heating

For a data center in Denmark, Ramboll designed a heat pump system to recover excess heat from the data center and use it to heat the city of Odense. The project will recover surplus heat on a scale not yet achieved anywhere in the world, utilizing the biggest heat pump plant in Denmark. Ramboll also carried out building design, tender, construction management and supervision of the building contract work.

WHO WE ARE

Ramboll is a leading engineering, design and consultancy company employing 13,000 experts. Our presence is global with especially strong representation in the Nordics, UK, North America, Continental Europe, Middle East and Asia-Pacific. We constantly strive to achieve inspiring and exacting solutions that make a genuine difference to our clients, end-users and society at large.

CONTACT US

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MISSION CRITICAL & DATA CENTER FACILITIES

The dependency on IT in all walks of business puts data centers and telecom facilities at the heart of an organization’s operations and represents a mission critical component of a company’s business. The overall lifecycle and lifetime objectives of the facility must be considered during the site selection, design, construction and operation activities associated with developing the data center or telecom facility. Our professionals have the experience to understand the needs of this sector while delivering planning, environmental, management, construction and project coordination services to ensure that an operational facility is delivered and commissioned on time and within budget.

Our approach not only applies to new build projects, but to existing facilities – whether delivering operational efficiencies, responding to regulatory changes or improving energy efficiency.

Big data, cloud, mobile and analytics all form part of the digital transformation, essential to which is the design of agile and flexible core facilities to deal with ever-changing business needs and technology requirements.

PROJECTS AROUND THE WORLD

Water supply risk analyses for data center expansion

A multidisciplinary Ramboll team of natural resource economists, hydrologists and water resource managers analyzed water supply and water management alternatives for a large data center. Our study identified the risks associated with the cooling water supply at the current data center and assisted in scoping and siting potential water resources for an expanded facility. Our final report provided the client with a list of options for securing more reliable water supplies for both facilities, including:

- Advanced backup water systems
- Renewable power generation
- Chiller plants and district cooling
- Community energy integration
- Fire and safety
- Micro-grid
- Community energy integration

Water supply and energy planning and permitting, including tradeoffs associated with water recovery and recycled water. Ramboll’s multidisciplinary team completed this project on-time and within the budget.

New build 2MW data center design for Qatar Petroleum

To meet recognized industry standards, the data center required a concurrently maintainable facility with a fault tolerant electrical distribution capability, delivering up to a 2MW IT capability. High density IT rack loads were conditioned with the use of in-row coolers employed in a hot aisle containment configuration, with dual pipework systems, supplied from primary and secondary chiller plants each comprising an N+1 capability.

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New LEED Gold data center in Finland will provide 9,000 homes with heat

For TeliaSonera, we are developing a new 34,000 m², 24MW data center of Helsinki. Our management and lead consultant services, from feasibility through final handover, will result in the largest facility of its kind in Finland and LEED Gold certification. The facility will be capable of using heat pumps to recycle through a district heating system, which at its peak, will deliver over 20GW hours of heating energy to more than 9,000 local homes.

Climate positive data center

Believed to be the first climate positive data center in the world, with a cost-effective design and world-class technical performance, the center will initially include 20,000 m² and will be certified LEED platinum. Ramboll performed a feasibility study and the design of an integrated energy and energy recovery system. The new data center is located in the proximity of the combined heat and power plant (CHP) owned by Falun Energy. To achieve outstanding performance, the system (2x5 MW) will be entirely integrated with the CHP plant and the existing district heating and cooling systems.

Due diligence support to fast-growing data center in the Western US

Ramboll provides due diligence services to a Western US data center client experiencing tremendous growth. Over the past five years the client has more than doubled the number of data centers that it operates through a combination of targeted acquisitions and greenfield development. Ramboll provides environmental due diligence services, including Phase I environmental site assessments (ESA) and regulatory compliance assessments.