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# Smart combination of refrigeration and heat production

Sports facilities Oskarshamn, Sweden

The town of Oskarshamn, located in the southern part of Sweden, applied a new method to make efficient usage of energy: The waste heat from the production of ice for the hockey stadium is used for heating the new swimming pool. Thanks to this intelligent combination of refrigeration and heat production, CO<sub>2</sub> emissions could be lowered, resources preserved, and costs optimized.

## Oskarshamn Arena

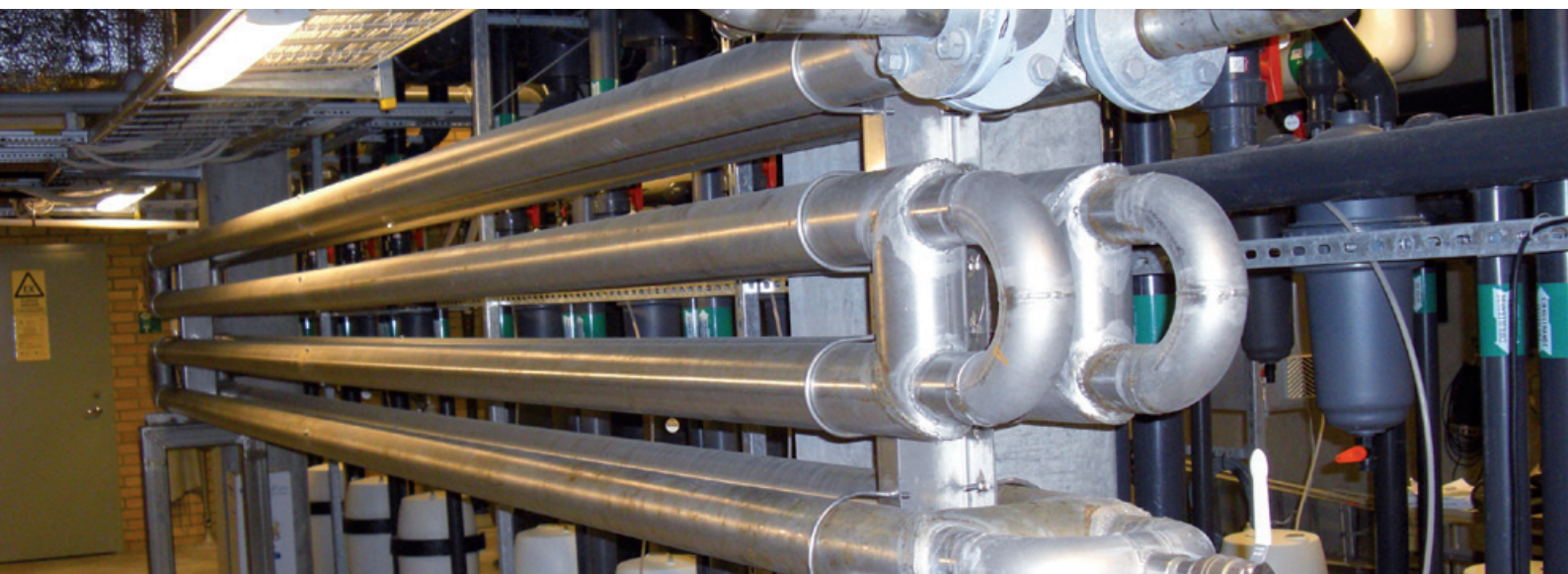
Oskarshamn Arena is comprised of an ice hockey stadium with gymnasium, office spaces, swimming pool, water park, café, and a playing field for bandy – a popular kind of ball and team sport played on ice.

When planning the project, town authorities wanted an integrated overall solution from a single source and asked Gila Control System AB, a Siemens Solution Partner, to do the project. Major requirements were energy cost savings and optimum control of the entire plant.

## Gila Control System AB

Gila Control System AB, a family-owned enterprise located in Rockneby in the southern part of Sweden, was founded in 1984 and is an official Solution Partner of Siemens in Sweden. The company looks back upon many years of successful cooperation with Siemens. The core competencies of Gila Control System AB are the development, sale, and installation of intelligent control systems for industry, buildings, and technical infrastructures.

**Answers for infrastructure.**



### Optimum building automation and control

Swimming pools and ice hockey stadiums are major energy users – a well known fact. For this reason, the town authorities wanted to combine both plants of Oskarshamn Arena in an intelligent way. This approach ensured optimum operation and made certain that plant control did not create any interface problems.

“When we started planning the swimming pool, we had the idea of constructing it right next to the ice hockey stadium,” explains Olof Eriksson, Facility Manager of Oskarshamn Arena. “We were fully aware of the energy saving potential we could tap if we used the waste heat from the production of ice for heating the swimming pool.”

Since all facilities are located in the same place, the waste heat from the refrigeration equipment can be used for heating all other plants. This includes three pools and plants for the supply of warm air and domestic hot water for general requirements.

### Impressive savings

Present savings are enormous and amount to one gigawatt per year. This means that CO<sub>2</sub> emissions are cut by about 600 tons. “Also, the combination of both plants makes it possible to have only one control and monitoring system and an efficient service organization, which offers additional cost savings,” says Olof Eriksson.

### Flexibility and energy efficiency thanks to Desigo™ building automation and control system

The installation is fully based on the Desigo building automation and control system supplied by Siemens. The Desigo Insight user interface enables air and water quality, temperatures, and other parameters to be constantly monitored on a screen and to be readjusted, if required. Thanks to the password-protected OZW Web server, the password-protected OZW Web server, operating personnel can access the entire system from any PC. What’s more, fault status messages are forwarded to the service engineer – automatically per SMS.

### Highlights

- Significant reduction of energy costs and CO<sub>2</sub> emissions thanks to intelligent combination of refrigeration and heat production
- One system solution for different types of technical infrastructure simplifies the supervision of all plants
- Immediate reporting via Internet and SMS should faults occur

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The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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