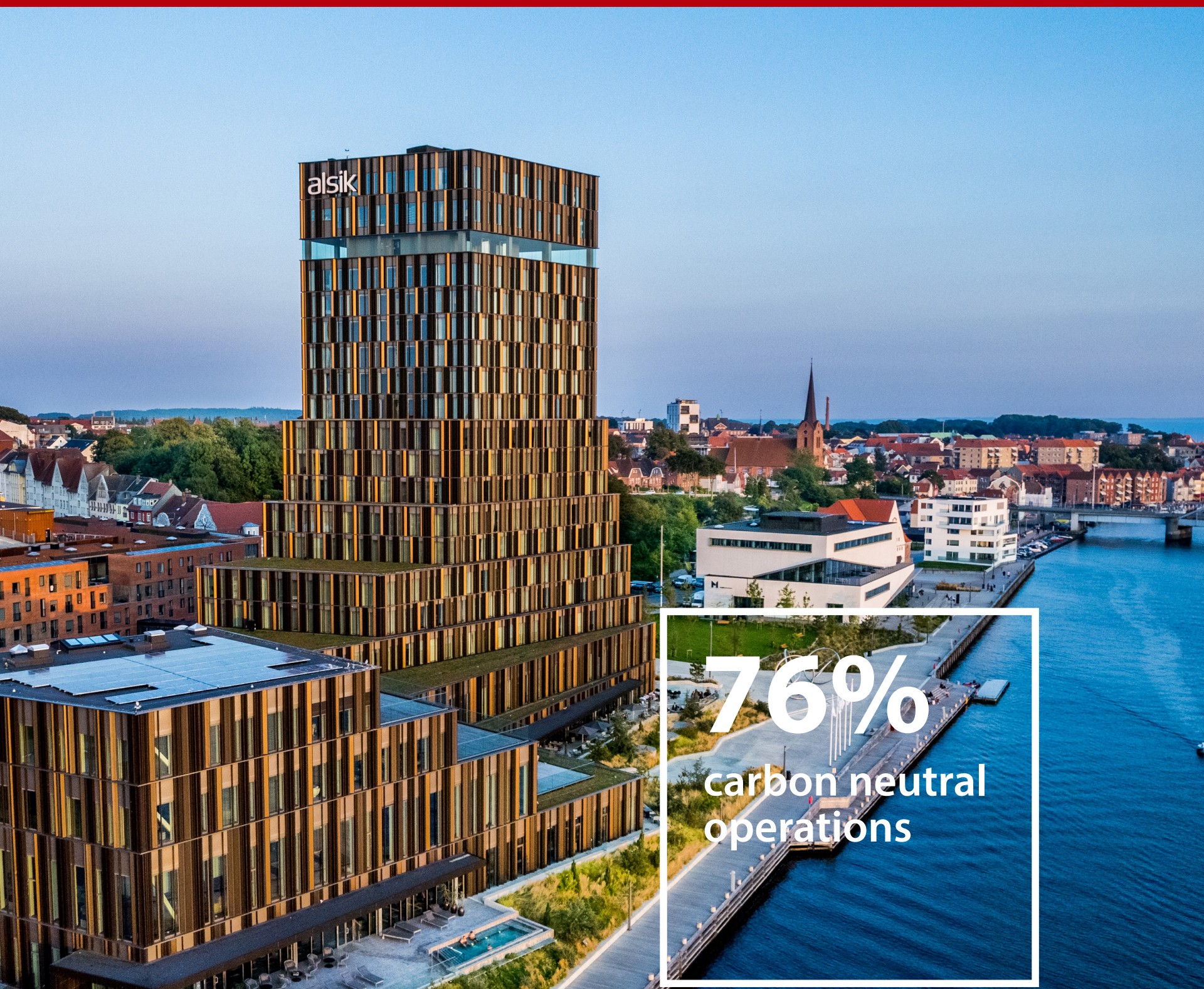
ENGINEERING
TOMORROW

Case story | VLT® HVAC Drive FC 102

A **carbon-friendly** check-in



76%
carbon neutral operations

The situation

Since opening in Sønderborg in 2019, Hotel Alsik has focused just as much on offering customers a truly relaxing and luxurious experience as it has on making it a sustainable one.

At 19 storeys high, Alsik is the region's first four-star conference and business hotel and was commissioned by PFA Pension and Bitten & Mads Clausen's Foundation, the latter of which owns Danfoss.

Built in compliance with BR2020 energy regulations, the owners have a goal to make Alsik one of Denmark's most sustainable luxury hotels – with Danfoss providing the energy efficiency solutions to get them there.

The challenge

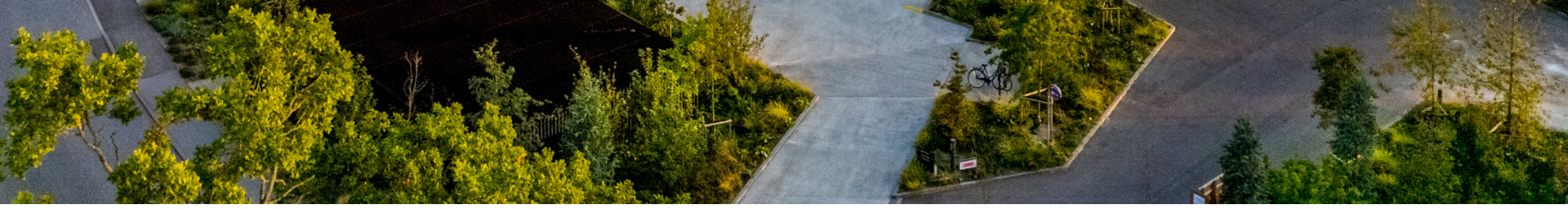
To offer the perfect combination of luxury and sustainability, every inch of Hotel Alsik had to be built with a green mindset – all the way down to the cement. For its owners, four areas in particular stood out:

- The floors and ceilings were to be designed to allow in as much natural light as possible
- The facade had to be made using recyclable aluminum

- All concrete had to be cast using natural materials with a high thermal capacity

- The HVAC system had to run 24/7 while minimizing downtime, maintenance costs and energy use

It was the latter area where Danfoss stepped in, working with the hotel's HVAC system to optimize operations without impacting air quality.



The solution

Danfoss installed VLT® HVAC Drive FC 102 units to build a fully optimized and energy efficient HVAC system while enabling central management and monitoring of all separate HVAC units. With the FC 102 units in place, the HVAC system was able to supply high-quality air while using less energy – in addition to working better for longer and, thus, lowering maintenance and overall running costs.

Danfoss also provided VLT® Pressure Transmitter PTU 025 units which, via the integrated filter monitoring system, can deliver early warnings regarding clogged filters, poor indoor climate and energy waste.

The work was carried out in cooperation with HVAC experts Nordomatic and with assistance from Danfoss' DrivePro® service partner STYREG.

"For such a large project, it was only natural to meet some bumps along the way, but Danfoss Drives' service staff were ready to support us throughout the entire process."

Jacob Haulrich, Nordomatic

The outcome

Today, just two years after its opening, **Alsik is 76% CO_2 neutral.**

The hotel's Building Management System, which is connected directly to the decentralized HVAC system, intelligently controls the flow of heated or cooled air to all guest rooms, conference rooms, restaurants, and the three-story spa.

Each separate ventilation unit is connected to the hotel's booking system so rooms can be heated to the right temperature before guests arrive, and the temperature is automatically lowered when rooms are not booked out, leading to significant energy savings.

Other energy efficient features provided by Danfoss include using excess heat from the refrigeration systems to provide hot water to guests.

And so, from the design of the hotel itself to its daily operations, and the power supply to the 380m^2 of solar panels on the roof, **the horizon looks clear for Alsik to continue lowering its carbon output.**

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