

PRESS INFORMATION **light+building 2026**

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Reference project Grundfos Mixit

The cutting edge of cooling

In the University Hospital in Aachen, a solution was researched to accommodate a new conditioned facility for the storage of laboratory samples for blood preservation and other biological products. This new storage facility needed to be permanently cooled using modern technology, be very reliable and have an optimally transparent process. And the heat produced during cooling has to be transported.

In the old situation, there was a room with over sixty freezers in it, cooling all kinds of laboratory samples at a temperature of minus eighty degrees Celsius, round the clock. The heat production that this entailed, required a considerable extra cooling effort. That set-up was a huge energy guzzler, producing a lot of noise. Moreover, it was impossible to monitor all freezers always keeping the right temperature.

The desired outcome, having to be commissioned through a competitive bidding, was a system that is secured against failure, displays the relevant cooling data in a clear and organised dashboard, that can be controlled efficiently and ensures less energy loss. This challenge was put before Marcel Schunk from SIWG GmbH and after a feasibility study, the Mixit solution from Grundfos was chosen.

Traditional or not

Schunk recognized that the main decision to be made, was to choose between a traditional mixing loop or the Mixit solution. “A traditional mixing group is comprised of several separate components with an additional separate power meter, whereas the Mixit solution integrates everything into one system. The best choice deemed to be the integrated solution. It came out as the best option in meeting all requirements in a compact and integrated solution, and it resulted in significant time savings in all areas. The design and selection of the complete solution during the planning phase was very simple, as was the installation of both the Mixit and the accompanying circulation pump Magna3. And for the user, the operation is very intuitive and easy.”

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The colleagues from the Refrigeration Department also immediately noted the benefits of the new solution. “The system is very easy to operate, and all the important information is displayed on a screen,” says Ralf Kühn, who heads the Refrigeration Department of the University Hospital. “You are able to set all parameters on this screen, with immediate feedback so that you can instantaneously see the effect of your settings”. The functionalities for energy metering are included and the integration in the building management system is effortless thanks to the built-in bus communication. Mixit integrates the controller, check valve, control valve, actuator, throttle valve, differential pressure valve, temperature controller and sensors are into one plug-and-play unit. The system supports both cooling and heating applications.

Space-saving solution

A crucial challenge was the limited available space. The solution had to be compact and at the same time offer all the functionalities needed to operate the mixing loop efficiently, plus those for energy measurement and optimisation. Marcel Schunk from SIWG says that before he knew of the Mixit solution, he always opted for a traditional mixing loop, with lots of separate components plus a separate energy meter. “But it requires quite a bit of space to install all these individual components. In this situation, that was difficult to achieve. Mixit offers an efficient and compact solution that saves a lot of space.”

Installation company Roderland took care of the installation. Wim Blättler from Roderland says that during the construction phase, close consultation took place with the client about optimising the location for the new cooling centre and the way in which the technology was led from there to the basement. The system is laid out redundantly and a nitrogen-based emergency cooling facility has been installed. In the basement of the huge building, Mixit is not the only Grundfos product. “We are very satisfied with the quality and service we experience using their products,” Kühn states. “That, of course, made us feel very confident when this solution was proposed.”

Fast and accurate control

“The pumps are frequency-controlled and connected to the Mixit units,” says Ralf Kühn. “When we set the Mixit, we see the pumps respond immediately. There is a real-time feedback and because of the immediate response, it functions very energy-efficiently.” Mixit and Magna3 can communicate with each other as well as

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with the Grundfos GO app. With the app, you can commission both components, adjust the operation and continuously monitor the result. With the enormous number of data points in the system, you always have real time information on how the installation is functioning, and are able to intervene swiftly if the system is not working optimally. This ensures less failure and service costs. Blättler: “At the same time, everything was laid out very old-school and secured three times.”

Kühn is happy with the solution. “We, as users, have a good overview of the parameters. Once the temperature is close to the target value, the cooling system switches down. You are able to control very accurate and tight. We could get even more out of it than we already do, and even now, it already reduces the energy consumption enormously. The cooling yield is controlled very accurate and clear, with minimal spend.”

“Mixit offers a solution that is much faster and easier to design and install, and is also a lot cheaper,” states Julian Betzer from Grundfos. “Many components are integrated so you need to install far fewer separate parts, which is a lot more effective overall.” SIWG consultant Schunk estimates the costs to be about 20% lower compared to a traditional mixing loop, just during design and installation alone. The energy savings are added on top of that.

((caption)) Ralf Kühn, head of the Refrigeration Department at Aachen University Hospital, praises Mixit's ease of use and immediate feedback when settings are changed (image credits: Grundfos)

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