

# Kazakhstan's global EXPO demands maximum reliability of pump systems

## The situation

When Alibek Karaulbekov was specifying the heating, ventilation and air-conditioning (HVAC) pumps for the buildings at Astana EXPO 2017, he had an absolute requirement: they must not break down under any circumstances. "Failure of equipment is inadmissible," he said.

After all, the Astana EXPO 2017 was going to be the Republic of Kazakhstan's showcase to the world. Kazakhstan has been called one of the most dynamic emerging markets in Central Asia. More than four years in the making, the Astana EXPO 2017 was preparing to be visited by millions of people, including many heads of states, the United Nations General Secretary, international companies and organisations.

It was being built in Astana, Kazakhstan's capitol city. It featured several new and modern buildings for more than 100 countries' technological exhibitions and an eight-storey, glass-covered spherical building for the country's own showcase.

Alibek Karaulbekov, Lead Manager of the Design Department at Astana EXPO 2017, had another main requirement for pump systems: they should also support the event's main theme, "Future Energy". In the case of pumps, that meant high energy efficiency.

"We chose all the pump-house equipment based on three important factors: reliability, durability and energy efficiency," he says, adding that after the EXPO exhibition, several of the buildings would be taken over by other organizations – an

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### TOPIC:

Heating, ventilation and A/C supply for global exhibition

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### LOCATION:

Astana, Kazakhstan

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### COMPANY:

Astana EXPO 2017

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international finance centre, a national university, a museum – but his team would still oversee running the HVAC systems.

#### The solution

Astana EXPO 2017 chose Grundfos as its main pump supplier. "They were the only firm that satisfied all of our requirements," says Alibek Karaulbekov. This included pumps for not only HVAC systems, but also water supply and sewage disposal.

Of significance for EXPO were the MAGNA3 and TPE3 large circulator pumps with MGE motors. Their energy-efficient attributes have made it possible for the motors to exceed the more common IE4 efficiency level, and so have been labelled IE5, the highest energy efficiency level worldwide for electrical motors. The IE5 level has been attained by all MGE-motors in the range from 0.75 to 11 kW.

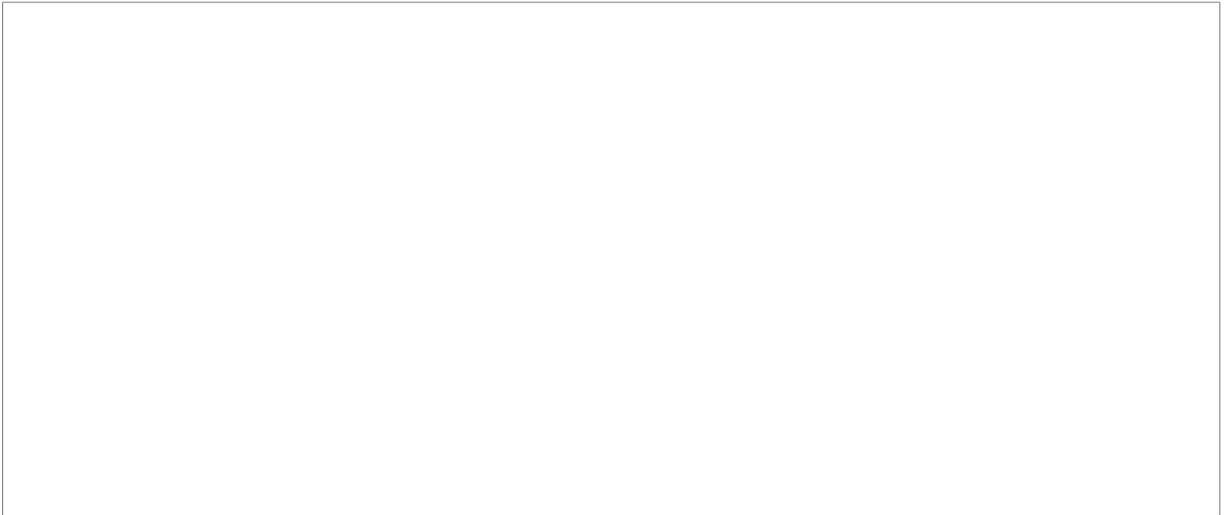
"We are entirely happy with Grundfos pumps," says Alibek Karaulbekov. "They require minimum attention. Their performance is clear to all the engineers who work at EXPO. Experience shows that currently Grundfos pumps are 20-25% more energy-efficient than the other pump manufacturers'. "And apart from that, they are satisfying a main requirement: the creation of comfort in our pavilions on our sites," he adds.

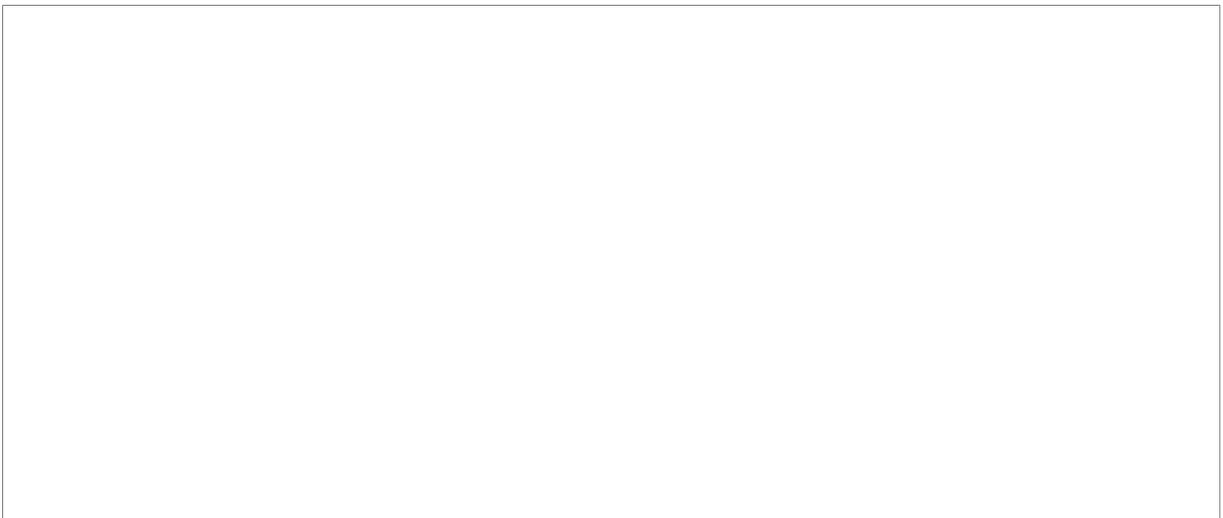
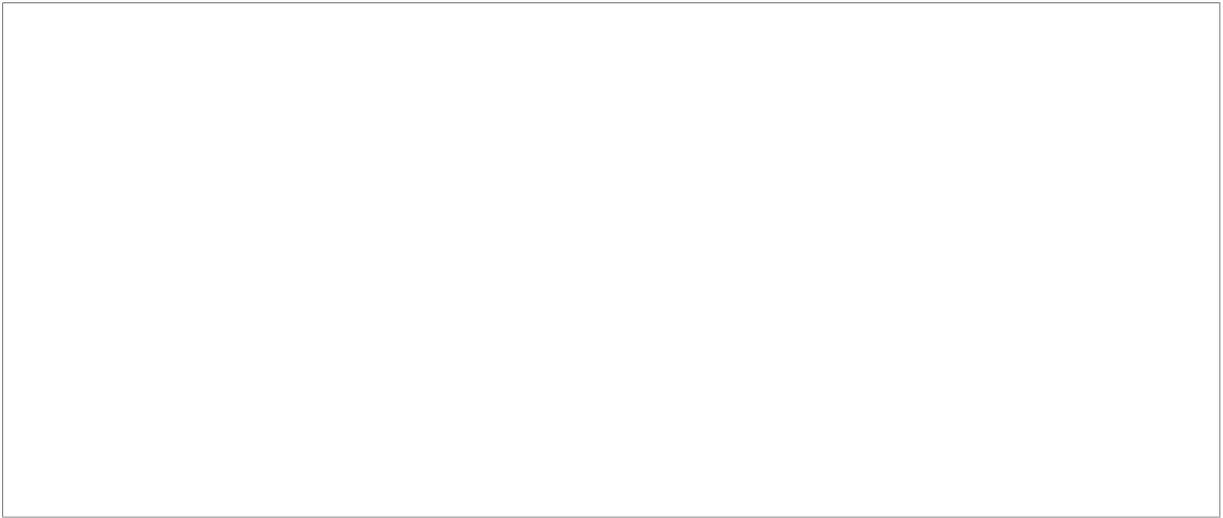
#### The outcome

As Alibek Karaulbekov is the lead manager for the team of operations engineers who serve the equipment, he does not usually need to visit the mechanical rooms personally for control of equipment operation. It is only when there is a problem, and he has only gone once. But it was not the pumps' fault.

"The air-conditioning system was running at just 30% of its capacity," he says. "But it turned out it had nothing to do with the pumps. The problem was in the coolers. So we dealt with this problem. And the pumps are still working well – as they should."

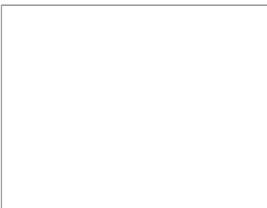
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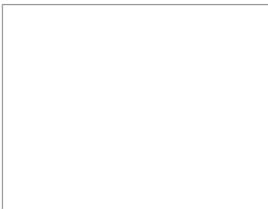
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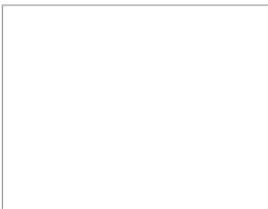
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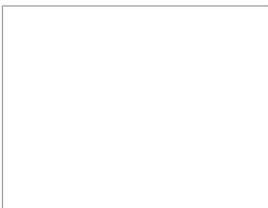
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