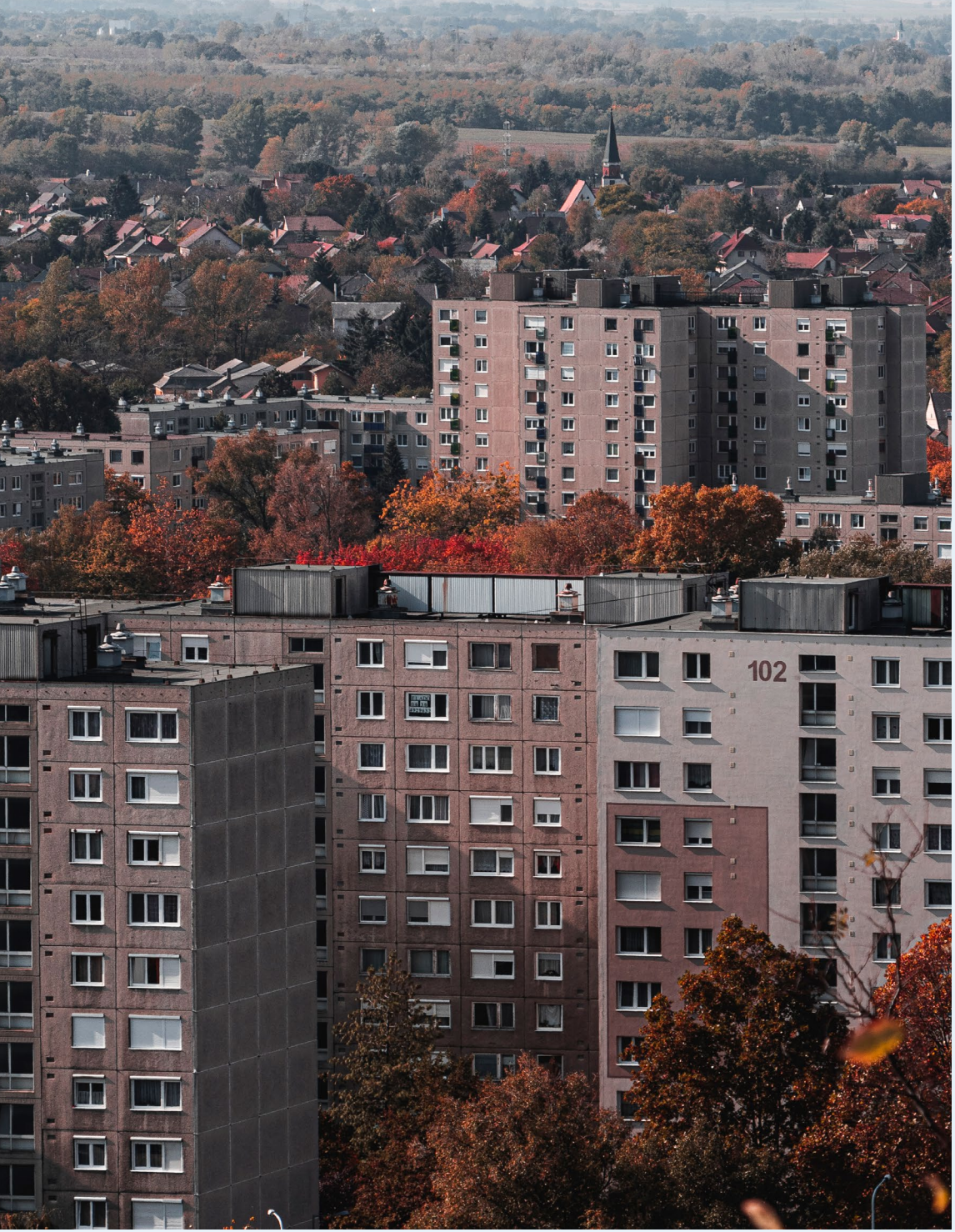


Case | Grundfos MIXIT in Hungary

MIXIT saves energy and costs in district heating subnetwork

Automatically adjusted and balanced mixing loops for four residential units

When establishing a new subnetwork for four residential units in a district heating system in Hungary, Grundfos and T-Szol, the local operator, worked on a collaborative project to implement an energy-efficient MIXIT-based solution that required only one substation instead of four.

GRUNDFOS

Possibility in every drop

Executive summary

While establishing a new district heating subnetwork in Tatabánya, Hungary, the local operator T-Szol wished to implement a dynamic system that would take into account the differing demand conditions of each unit. In consultation with Grundfos, a single substation was installed, distributing to four mixing loops each controlled by MIXIT. This saved the building operators valuable space in each unit, since no dedicated substation for individual buildings was required. As the MIXIT solution and intelligent MAGNA3 circulator pumps respond dynamically to demand, they save energy and costs, and are controllable via the operator's SCADA system.

The situation

Tatabányai Szolgáltató Zrt. (T-Szol) is a diverse organisation supplying, amongst other services, district heating to residents and business facilities in the towns of Tatabánya and Baj in Komárom-Esztergom county, to the west of Budapest, Hungary.

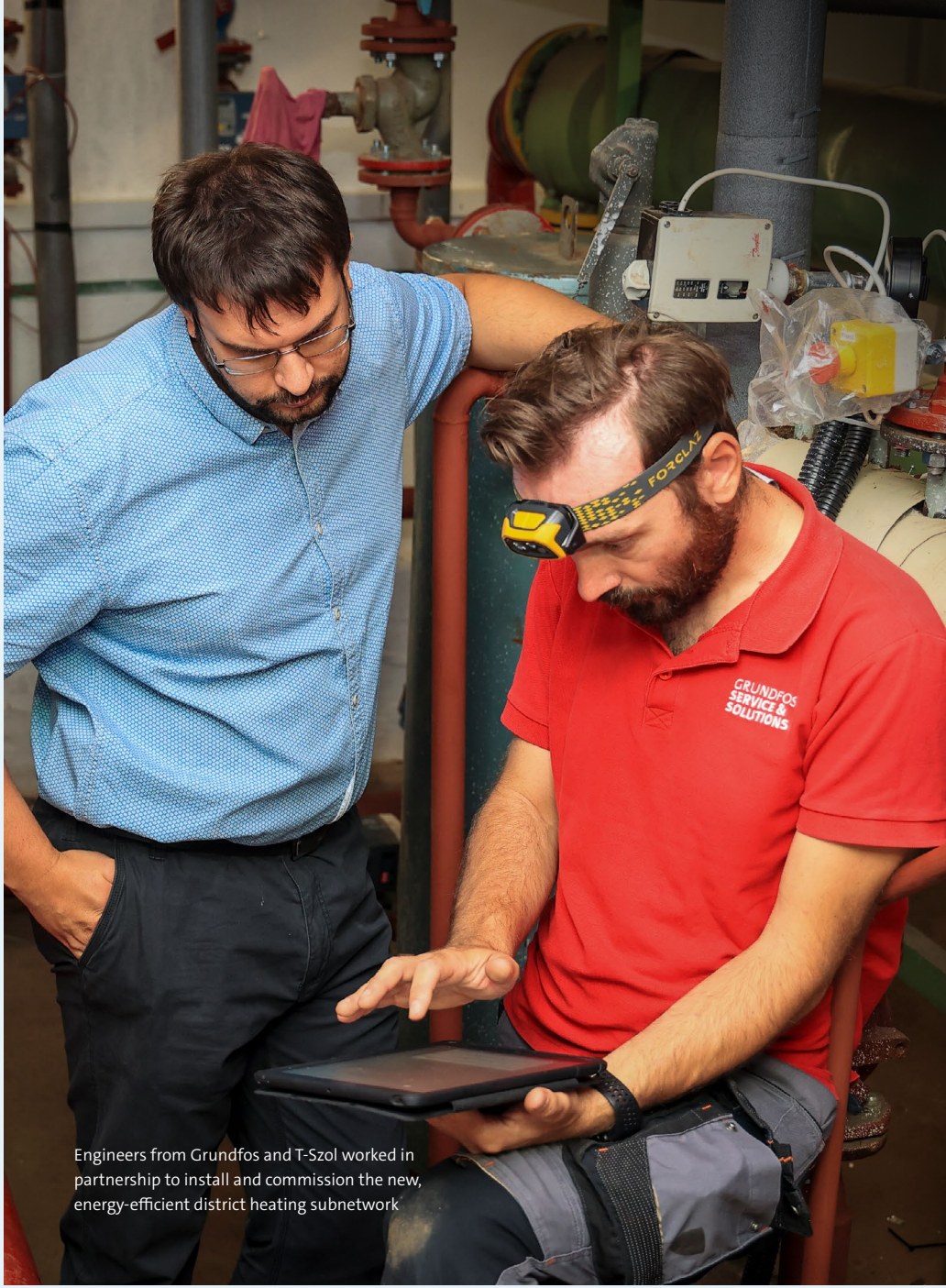
Heat energy is supplied to around 23,000 consumers over 200 km of pipeline, and distributed by central heating substations installed to separate the primary network from the secondary system by means of heat exchangers and corresponding control elements, on primary and secondary networks just as was traditionally done in the past – i.e. evenly and irrespective of differentiated demand in individual units.

While planning a subnetwork of three blocks of flats and a block of terraced houses, T-Szol wished to take into account the differing heat loads and forward temperature demands of the residential units, and prepare secondary water conditions (flow and temperature) in the individual buildings accordingly.

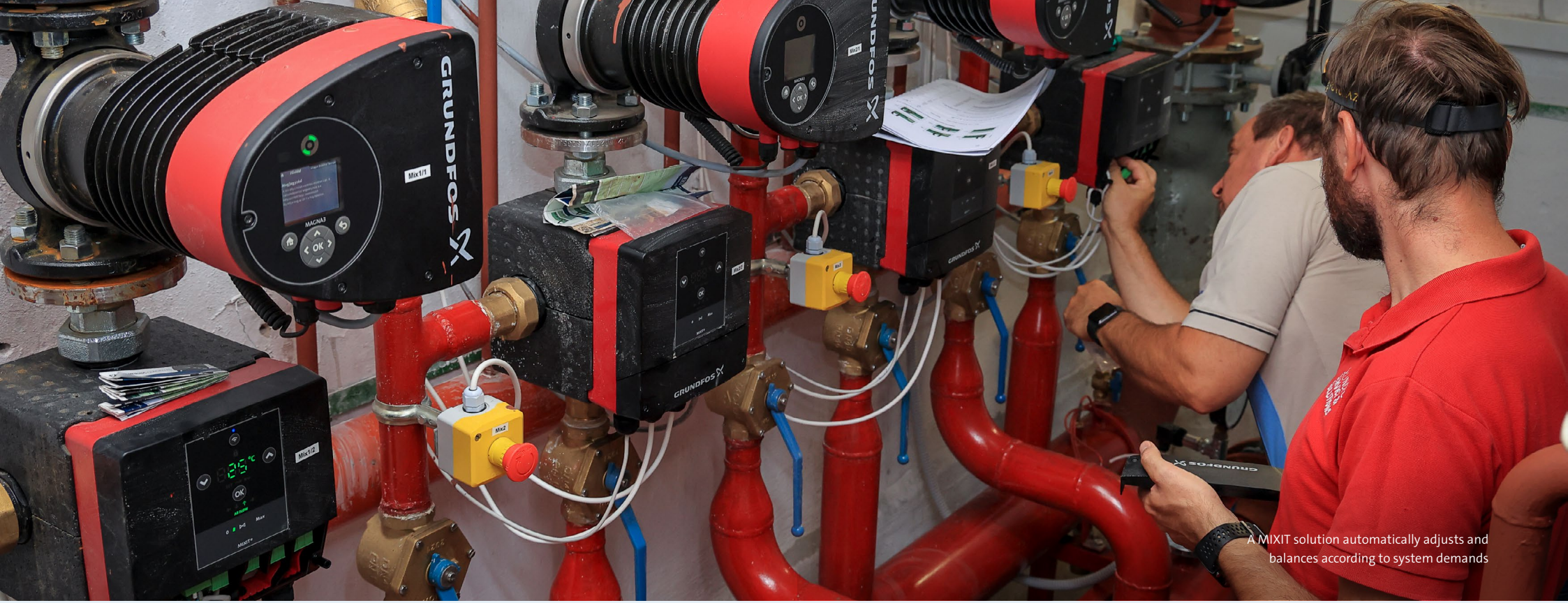
"Adding MIXIT into our district heating system enables us to implement subsystems that are truly demand-based, saving us energy, reducing wastage and making it easier for us to commission, balance and control."

András Molnár, Technical Supervisor
T-Szol zrt., Tatabánya, Hungary

A traditional subsystem would place a substation in each of the four buildings, and as this would occupy valuable space and therefore lose out on potential rent, T-Szol wanted to consider alternative options.



Engineers from Grundfos and T-Szol worked in partnership to install and commission the new, energy-efficient district heating subnetwork



A MIXIT solution automatically adjusts and balances according to system demands

The solution

In consultation with Grundfos, T-Szol decided to use a single central location to equip a substation that would produce the required water conditions for all four buildings.

Instead of using primary flow control, the technical decision-makers favoured a new approach with Grundfos MIXIT, an all-in-one mixing loop solution that simplifies commissioning and balancing and automatically adjusts and balances according to system demands.

In this case, MIXIT provides a three-way valve for all four loops. Manifolds for each loop and MAGNA3 pumps were installed centrally to transport the water into each building block.

The outcome

Now fully operational, the MIXIT-based district heating subsystem brings T-Szol a number of advantages.

Together with the high-efficiency MAGNA3 pumps, MIXIT increases each building's energy efficiency, and offers full control and real-time monitoring. As a result of only one substation being needed overall instead of in each building:

- Additional space is freed allowing more room for residential space and rental income;
- Installation time at the location was reduced and thus interruptions to supply decreased;
- The whole installation also proved cheaper as a result.

Adding MIXIT Connect and Dynamic upgrades to the solution has also opened up access to balancing limiter functions, pressure independence, energy monitoring and fieldbus connectivity, enabling it to integrate seamlessly into the local SCADA system with remote, real-time monitoring and control possibilities for the operator.

Currently, T-Szol is testing the feasibility of switching off the secondary pump (a Grundfos TP with CUE controller) completely, to switch to a pressure independent system and thereby save even more electricity.

“This has been a very positive collaboration between our local experts and T-Szol’s engineering team. Together, we’ve launched a future-ready district heating subsystem at the cutting edge of energy efficiency.”

Iván Szádóczki, Sales Manager
CBS Grundfos

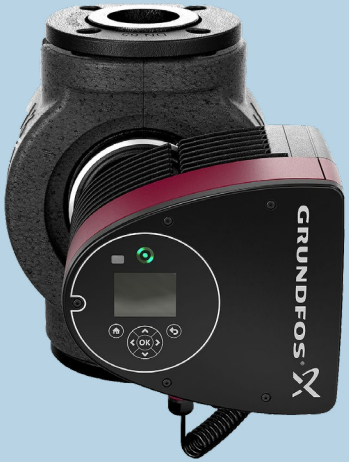
Grundfos supplied

4x MIXIT 32-16 L NRV units
4x MAGNA3 32-120 F pumps
MIXIT Connect and Dynamic upgrades

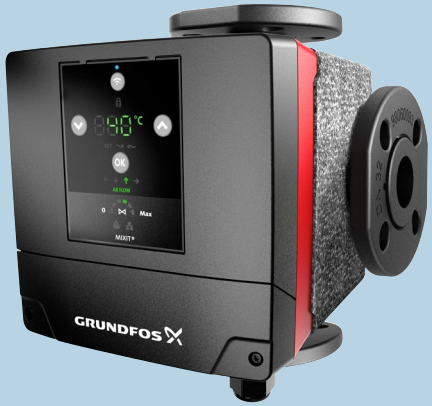
Explore more

Explore Grundfos MIXIT
How to connect your MIXIT to a BMS
Learn about District heating on Grundfos.com

MIXIT Connect and Dynamic



MAGNA3 32-120



MIXIT 32-16

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