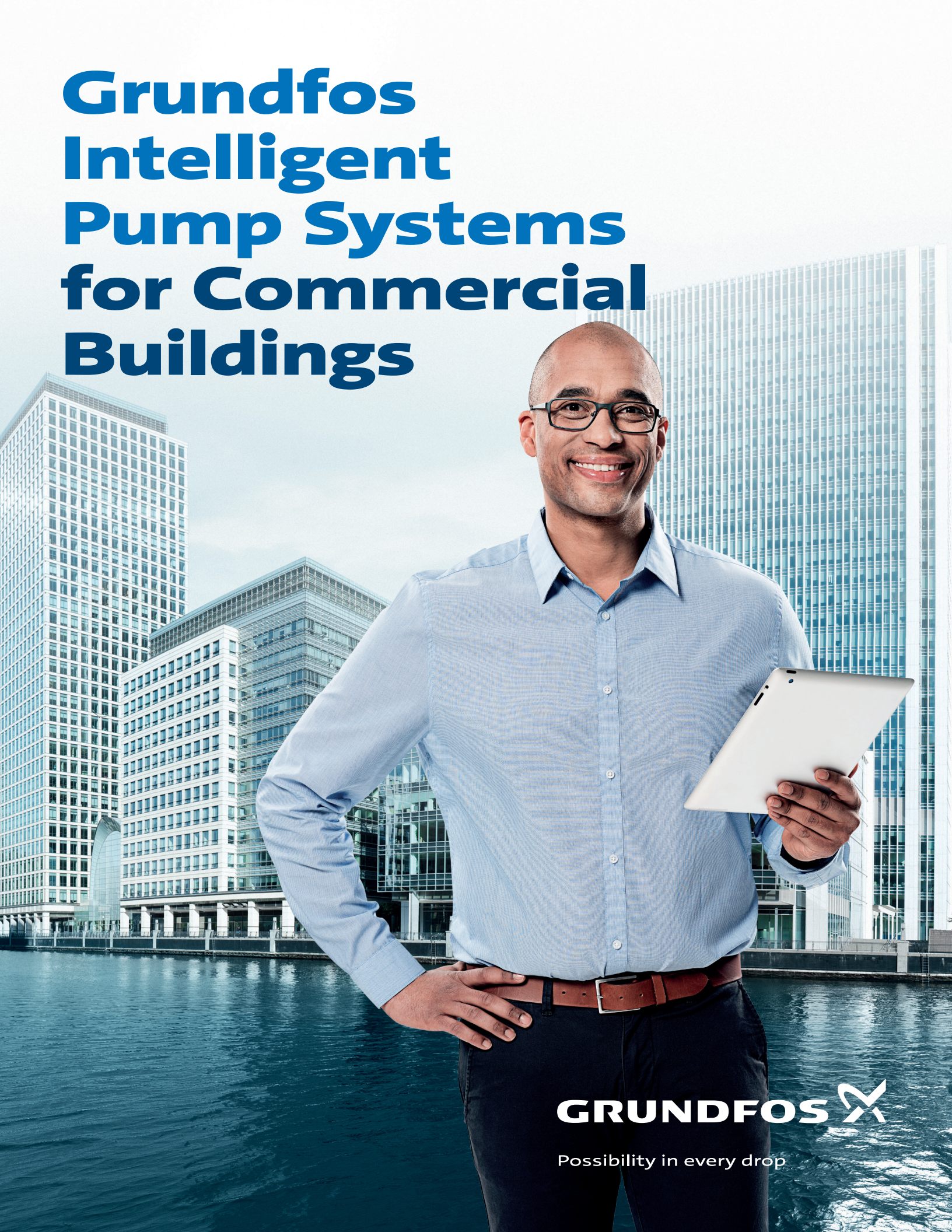
Grundfos Intelligent Pump Systems for Commercial Buildings



GRUNDFOS

Possibility in every drop

With 5.6 million commercial buildings consuming 20% of our country's energy, It's time for intelligent solutions.

There are more than 5.6 million commercial buildings in the United States today, totaling over 87.1 billion square feet — from skyscrapers and schools to hotels and hospitals. These buildings account for more than 20% of our country's energy consumption and face continuous pressure to reduce usage and join the growing ranks of those seeking LEED and ENERGY STAR certification. That's why Grundfos offers a range of intelligent systems for any application, for both new construction and retrofits, to help you improve overall energy efficiency without sacrificing comfort or reliability.

Heating & Cooling

Keep the people in your building comfortable while reducing your energy consumption, costs and environmental footprint. Grundfos pump systems adapt continuously to system demands.

Pressure Boosting

Keep pressure consistent throughout your building, from floor to floor, all day long. Grundfos boosting systems make it possible with optimal efficiency.

Wastewater

Balance your water system performance and reliability with cost efficiency and serviceability. Grundfos can design your entire system to meet your specific needs, leveraging high-quality components and decades of expertise.

Water Treatment

Ensure safe, clean water throughout your building with the highest level of efficiency. Grundfos chlorine dioxide disinfection systems deliver superior performance.

Fire Protection

Rest assured that your pump is reliable in emergency situations, regardless of the type of fire protection system in your building. Grundfos provides a range of specialized solutions that allow you to focus on what's important in the event of a fire.

District Energy Central Plant

Heat and cool a series of buildings with optimal efficiency through a connected system. Grundfos solutions maintain comfort while decreasing your energy consumption and life cycle costs.

Rainwater Harvesting

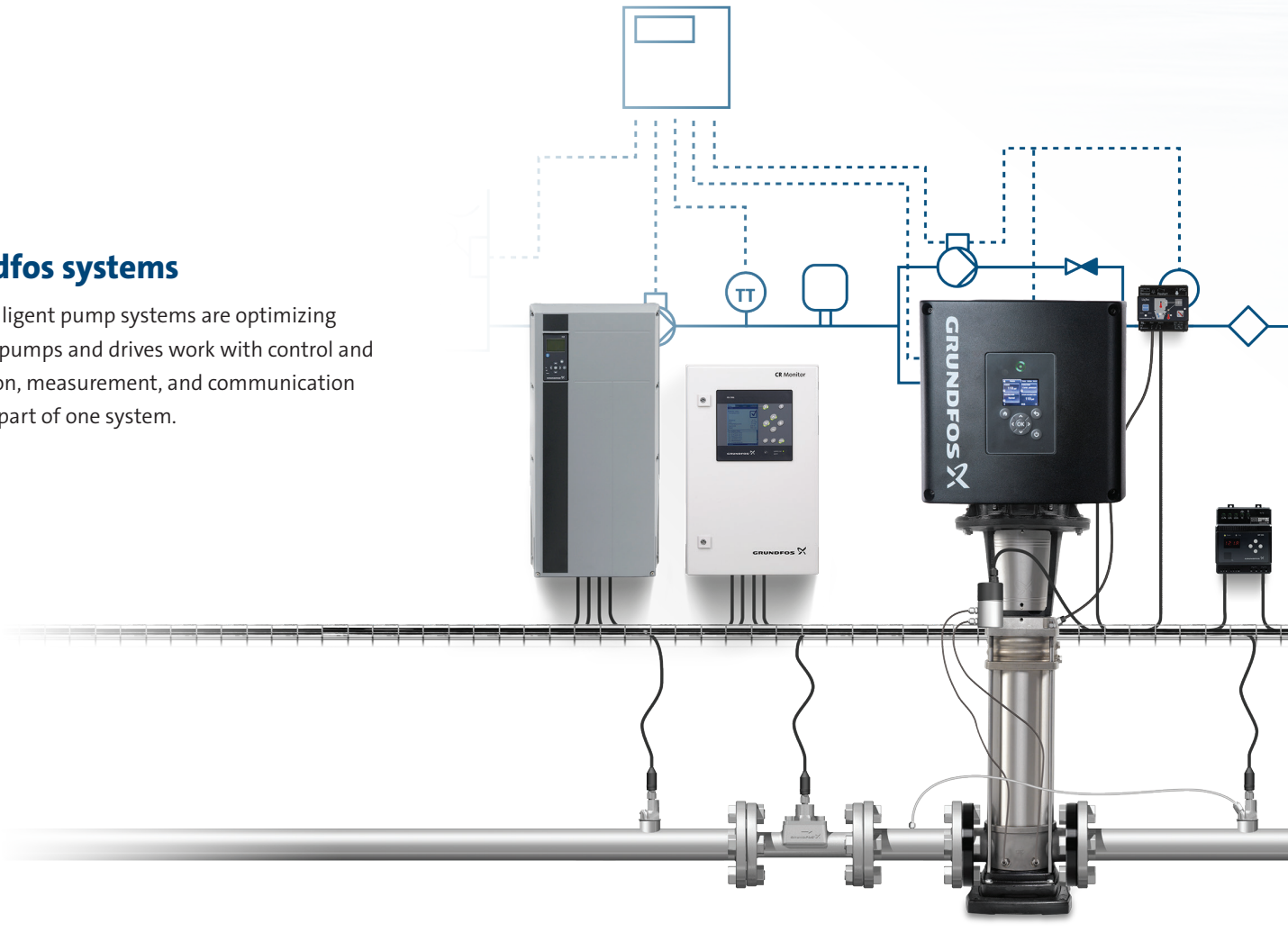
Reduce your water consumption and improve overall building sustainability by collecting rainwater for non-potable uses. Grundfos rainwater harvesting systems feature integrated smart controls for energy-efficient operation.

Pumping intelligence for today's smart buildings

High-performing buildings require reliable, high-performing pumps that can meet your evolving needs. Grundfos has designed intelligent pump systems that address your changing demands by allowing you to take control of your entire system. Smart control modes allow our pumps to automatically adjust to the most critical system demands, to ensure optimal temperature, flow and pressure without compromise. Grundfos gives you a pump system that helps you achieve the performance you're looking for, while increasing the efficiency of any application.

Grundfos systems

Our intelligent pump systems are optimizing the way pumps and drives work with control and protection, measurement, and communication units as part of one system.



Grundfos communication

It's easy to control our intelligent pump systems from your own building management system (BMS) because our pumps can talk to every BMS. The permanent magnet MLE motor easily integrates with many communication network protocols, including the two leading protocols: BACnet and LON.

Looking for a mobile option? The Grundfos GO application gives you full control over pump performance and easy access to information, reports, and assistance for the Grundfos online tools. Get ready to save valuable time on pump control, data collection and reporting with the most comprehensive mobile platform on the market.

Grundfos intelligence

- **Improved system reliability:**
  Reduced downtime and maintenance costs
- **Best-in-class energy efficiency:**
  Up to 50% energy savings and 25% reduction in life cycle costs per year*
- **Better system performance:**
  Optimized process control through targeted functionality and extended measuring capability
- **Increased simplicity:**
  Built-in functionalities substitute for external components and control equipment

* Figures are based on a pump with a 4.02 HP motor in an application running 12 hours per day, 220 days per year. Average CO_2 per HPH is set to 0.816 lbs. Life cycle cost calculation is based on a 10-year period.

Featured products

There are many types of commercial buildings — from skyscrapers to hospitals and more. But they all have a few things in common when it comes to what they need from their pump systems. Of course, a key driver is optimal efficiency to meet today's rigorous energy consumption standards. Grundfos answers the call with a range of intelligent pump systems that don't sacrifice power for efficiency.

But energy efficiency is just one hallmark of our product range. Our design and engineering expertise also addresses and delivers upon our customers' other crucial must-haves:

- **Compact footprint**
- **Lower operating costs**
- **Quick plug-and-pump installation**
- **Easy integration**
- **Improved reliability**
- **Simplified maintenance**
- **Grundfos GO compatibility**

In our featured products, the the permanent magnet MLE motor with built-in intelligent controls combines a VFD and a permanent magnet motor to deliver high efficiency and optimal performance.

Overall efficiency

Most efficient motor; two levels above NEMA Premium

- Up to 10% reduction in energy costs over NEMA Premium
- Up to 50% increase in annual energy savings with integrated variable frequency drive
- Up to 1 ton less CO2 produced annually (per 4 HP)

Intelligent controls

- Multiple control modes that can be prioritized: constant T and P, ΔT, ΔP
- Increased pump life with demand based operation
- Up to 25% quicker payback time

Available in single or dual head models.

MAGNA3

- Optional CIM cards for BMS integration
- AUTOADAPT self-adjusting set point
- Built-in heat energy meter
- Flow*: max. 484 gpm
- Head*: max. 60 feet
- Liquid temperature: 14 °F to 230 °F

Applications

Heating & Cooling

Hot Water Recirculation

Available in single or dual head models.

TPE3

- Control modes: AUTOADAPT, proportional pressure, constant ΔP and / or ΔT, constant curve
- Wireless control of up to 4 pumps in parallel utilizing cascade mode or duty / stand-by
- Integrated ΔP and temperature sensors, eliminate the need for additional sensors in most cases
- FLOWADAPT eliminates the need for a balancing valve
- Flow*: max. 500 gpm
- Head*: max. 114 feet
- Liquid temperature: -13 °F to 248 °F

Applications

Heating & Cooling

District Energy

Hot Water Recirculation

** For single and dual head models.*

CRE

- Vertical multistage centrifugal pump
- CIM card for easy BMS integration
- Quick, 15-minute cartridge seal change
- Integrated sensor available
- Flow: max. 450 gpm
- Head: max. 820 feet
- Liquid temperature: -22 °F to 248 °F

Approvals

System NSF 61/372 Certified

UL® Listed Packaged Pumping System

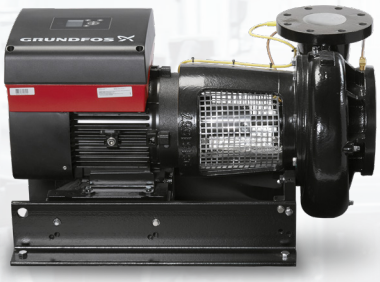
Applications

Heating & Cooling

Hot Water Recirculation

Boiler Feed

Pressure Boosting



LCSE

- Compact, close-coupled design, 35% smaller than traditional frame-mounted pumps
- Lifetime alignment guarantee
- No baseplate grouting or laser alignment required
- Quick-change seals
- Double volute / suction splitter design
- Flow: max. 1,900 gpm
- Head: max. 380 feet
- Liquid temperature: 10 °F to 275 °F

Applications

Heating & Cooling

District Energy

VLSE

- Compact vertical in-line split coupled pump
- Grundfos sensor technology for proportional pressure
- Vertical shaft configuration for longer seal and bearing life
- Suction baffle for smooth, quiet pump operation
- Lifetime alignment guarantee
- Flow: max. 1,990 gpm
- Head: max. 420 feet
- Liquid temperature: 10 °F to 275 °F

Applications

Heating & Cooling

District Energy

Pressure Boosting

HYDRO MULTI-E

- Allows 2–3 CRE pump configurations
- Integrated, pre-tested components and pre-loaded pump curve data
- Graphic display of master pump or Grundfos GO app for easy control
- Energy-efficient VFD
- Flow (2–3 pumps): max. 460 gpm
- Head: max. 475 feet
- Liquid temperature: 32 °F to 176 °F

Approvals

System NSF 61/372 Certified
UL Listed Packaged Pumping System

Applications

Heating & Cooling

District Energy

Pressure Boosting

HYDRO MPC

- 2–6 CRE pump configurations
- CU 352 controller includes application-optimized and customizable software
- Multisensor zone control
- Built-in redundancy and monitoring settings, along with data logging capabilities
- Pump sequencing based on highest efficiency
- SCADA communication capable via all industry standard BUS protocols
- Flow (2–6 pumps): max. 6,000 gpm
- Head: max. 1,363 feet
- Liquid temperature: 32 °F to 180 °F

Approvals

System NSF 61/372 Approval
OSHPD — Seismic Certification (OSP-0491-10)

UL Listed Packaged Pumping System

Applications

Heating & Cooling
District Energy
Pressure Boosting

Grundfos Engineered Systems

Grundfos engineers work with you to find the right solution to meet your needs. Whether that is a modification to an existing product or creating a completely new, site-specific solutions. All our systems are built with the most efficient pump technologies and intelligent controls available. We handle installation and startup, and operate as a single source of responsibility to minimize your costs. Depend on GES for:

- Packaged heat transfer systems
- Packaged chiller plants
- Packaged pumping systems
- Packaged boiler systems and plants

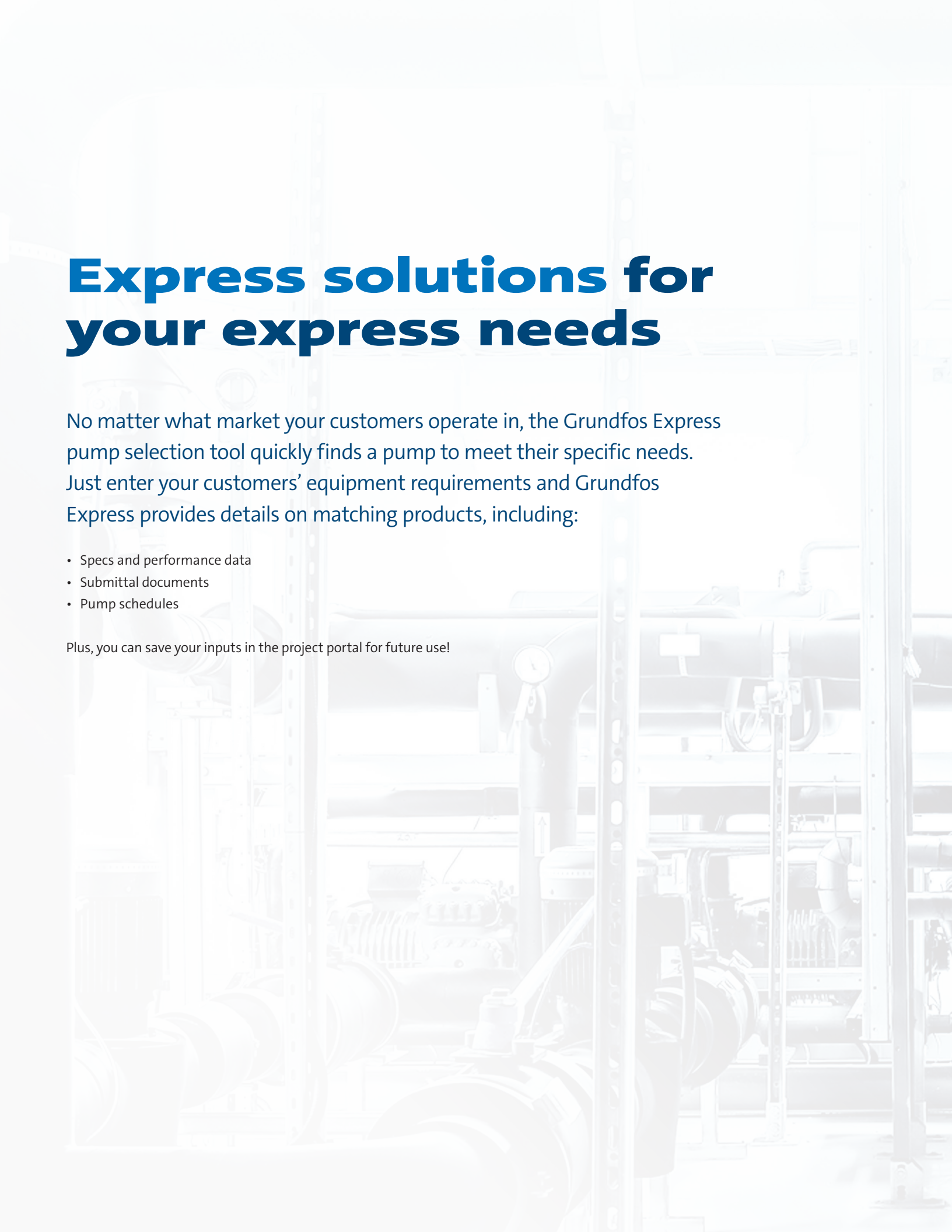
To see our full list of solutions for commercial buildings visit **grundfos.us/cbs**

Express solutions for your express needs

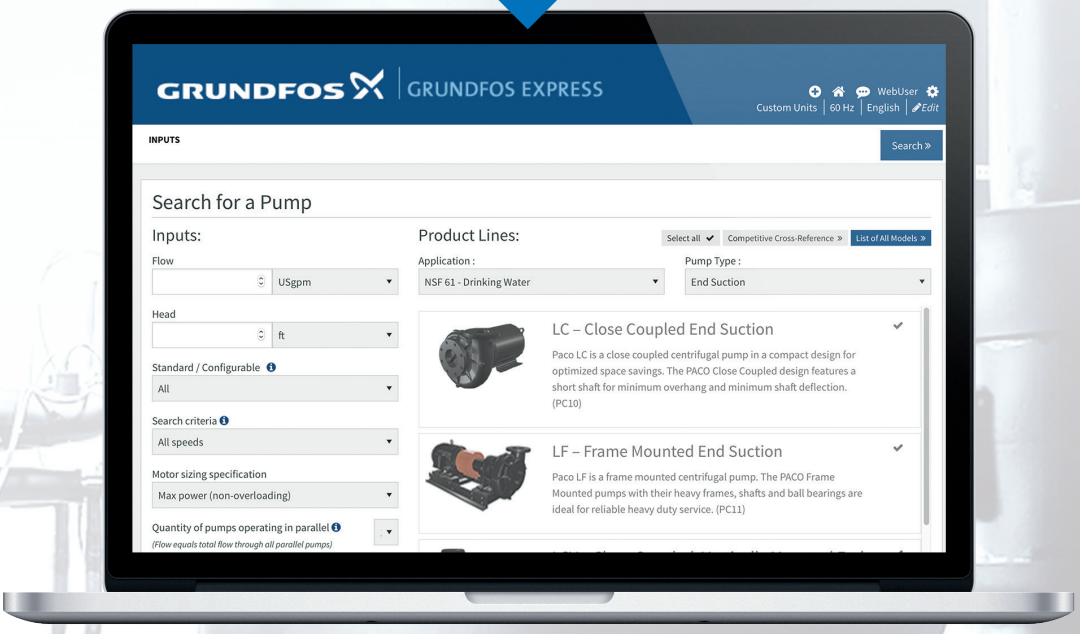
No matter what market your customers operate in, the Grundfos Express pump selection tool quickly finds a pump to meet their specific needs. Just enter your customers' equipment requirements and Grundfos Express provides details on matching products, including:

- Specs and performance data
- Submittal documents
- Pump schedules

Plus, you can save your inputs in the project portal for future use!



Find the right pump for your customers quickly and easily at **GrundfosExpress.com**



More Value. Less Energy.

Don't settle for costly and complex systems. Save time and costs while improving system integration, efficiency, and performance with Grundfos smart pumps. See the possibilities.

grundfos.to/smart-pumps

Visit grundfos.us/pei to learn more about Department of Energy (DOE) pump energy index (PEI) requirements and PEI ratings on specific Grundfos models.

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