Excellence in Flow+

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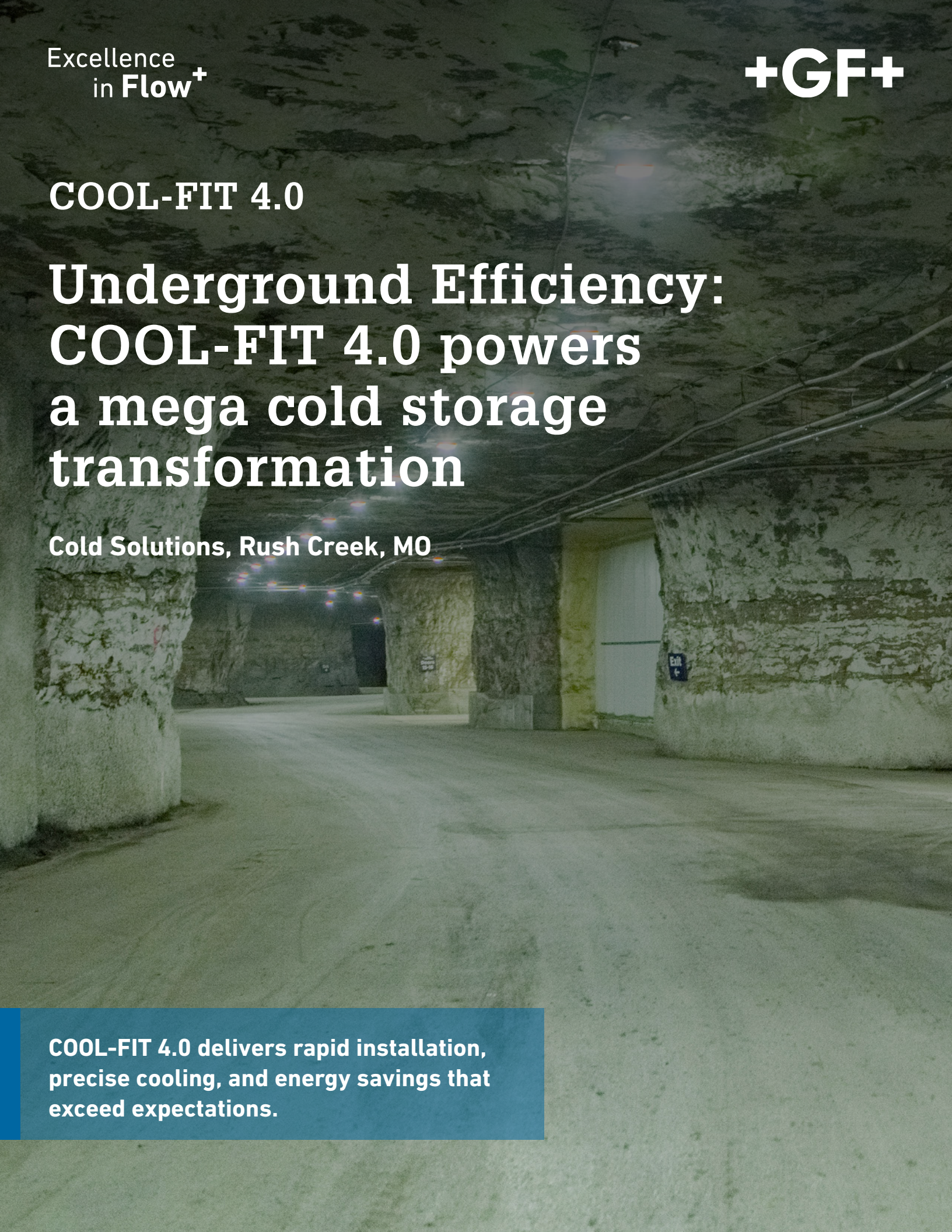
COOL-FIT 4.0

Underground Efficiency: COOL-FIT 4.0 powers a mega cold storage transformation

Cold Solutions, Rush Creek, MO



COOL-FIT 4.0 delivers rapid installation, precise cooling, and energy savings that exceed expectations.

Cold Solutions Rush Creek, MO

Cold Solutions transformed a 185.800m² former mine into a state-of-the-art cold storage facility, leveraging the site's natural subterranean temperature stability. The project required a safe, efficient, and corrosion-resistant piping system to handle long runs of brine and ammonia for refrigeration. By selecting COOL-FIT 4.0 the pre-insulated piping, the team achieved rapid installation, reduced maintenance, and significant energy savings.

Project background

The Rush Creek mine offered nearly 185.800m² of space 44 meters underground. While the mine's rock retains cold, retrofitting it for industrial-scale refrigeration meant managing long pipe runs, large volume cooling, and precise temperature control. Traditional steel systems presented challenges in weight, installation time, and brine corrosion resistance. CRS needed a solution that combined safety, efficiency, and ease of installation—especially given ongoing labor shortages in the pipe fitting industry.

Selected technical solution

The CRS engineering team designed a refrigeration system using ammonia as the primary refrigerant and brine as a secondary coolant. For circulating the brine, they chose COOL-FIT pre-insulated piping and integrated valve technology. COOL-FIT 4.0 eliminated welding, reduced installation steps, and delivered immediate insulation upon installation. GF provided end-to-end support—from early design consultation through to on-site training and certification of every crew member. The integrated valve system ensured precise flow control, optimizing cooling efficiency over the entire facility.

Customer comment

Since commissioning, the brine loop that runs at -27°C, has maintained less than than -16°C of temperature loss over the longest 488 meters run. Energy use is 23–24% lower than projected, and maintenance needs are minimal with no corrosion risk.

"COOL-FIT was a very good decision for us. Installation time was drastically reduced, and the product's performance exceeded our expectations. For any application where you can use COOL-FIT, give it a chance—you'll be happy you did."
Terry Williams
VP, Application Sales, Cold Solutions

COOL-FIT 4.0 piping combined with GF valves delivers optimal cooling performance and efficiency for the underground cold storage facility.

Safe, lightweight and quick to install, COOL-FIT 4.0 lowers structural demands on buildings and supporting structures while reducing the need for heavy and expensive transport aids.

Customer benefits

- **Faster Installation: drastically shortened the timeline from piping to system operation, allowing immediate system startup after piping completion**
- **Thermal energy efficiency: Achieved 23–24% lower utility costs than projected, aided by minimal temperature loss over long pipe runs.**
- **Corrosion-Free System eliminates the need for expensive nondestructive testing and ongoing maintenance.**
- **Reliable, Maintenance-Free Operation: pre-insulated and corrosion-resistant valve technology minimizing maintenance and maximizing reliability by delivering consistent, long-lasting operation.**

Where next?

Check out the Cold Storage video

Speak to an Expert

Visit our webpage to get in touch with your local specialist:
www.gfps.com

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