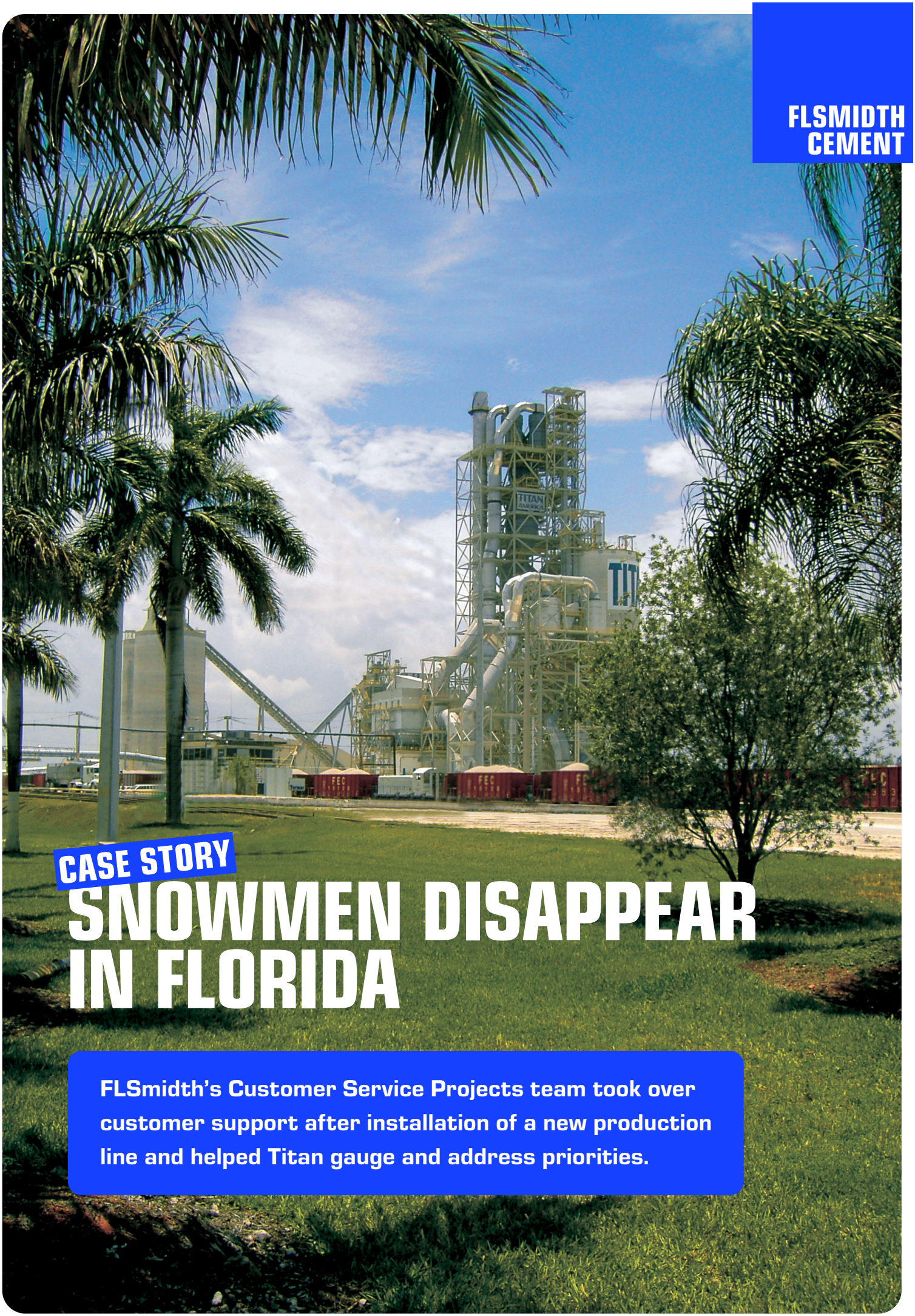

FLSMIDTH CEMENT

CASE STORY

SNOWMEN DISAPPEAR IN FLORIDA

FLSmidth's Customer Service Projects team took over customer support after installation of a new production line and helped Titan gauge and address priorities.

Titan America - Pennsuco Plant, USA
Great collaboration helped Titan improve various key parameters – and led to the first Air Blast Controlled cooler inlet in the U.S.

The objective
Titan Florida had recently finished the installation of a new production line supplied by FLSmidth and wanted FLSmidth's help to deal with a number of challenges, including severe snowman formation caused by chemistry fluctuations. Every eight hours their kiln was creating a snowman – and while their pit crew could hydroblast it out of the cooler inlet in less than 30 minutes, a more efficient solution was required. The snowmen were also affecting the wear life of the original cooler inlet and costing the plant major annual repairs.

Defining the project
An overall engineering and financial study laid the groundwork for the upgrade project. It then led to an incremental, multi-year plan developed in close collaboration with Titan Florida to continuously improve the plant's uptime, operation, reliability and efficiency.

Working with Titan Florida, FLSmidth Cement's CSP group eased the transition from the close of the major project by creating new ties with plant staff and helping them gauge priorities. Addressing the snowman problem was at the top of the list.

The solution
The solution featured the first ABC cooler inlet on the U.S. market – installed to improve the original Controlled Impact Section and set the model for future retrofits.

In addition to the ABC Cooler Inlet, FLSmidth also supplied three new cooler fans, a new heat exchanger to protect the cooler vent fan from temperature spikes, and modifications to the kiln dust handling system.

> **"The ABC inlet was a major improvement to the plant. Snowmen are quickly removed from the top, and maintenance work has not been performed since installation. The ABC project upgrade was a significant improvement for plant operations and maintenance."**
>
> **- GUILLERMO HABERER, MANAGER TITAN AMERICA, PENNSUCO PLANT**

Challenges
The upgrade required modifications to the plant that could only be performed during a shutdown. Because of the high demand for cement at the time, the downtime had to be minimised. FLmidth and Titan worked closely together to ensure solutions and designs that would allow for quick installation and short downtime.

Results
Following the upgrade, both operational efficiency and uptime increased. Snowmen were eliminated; secondary and tertiary air temperature increased; and fuel consumption, clinker exit temperature and compressed air consumption decreased. As of 2011, the inlet has been installed for more than four years and looks virtually new.

Today Titan has eliminated all snowman formations and overall operational efficiency has significantly increased.

Parameter	Result
Secondary air temperature	Increased by 210°C
Tertiary air temperature	Increased by 175°C
Fuel consumption	Decreased by 3%
Clinker exit temperature	Decreased by 20°C
Compressed air consumption	Decreased
Snowmen	None
Daily operator intervention	Eliminated
Personnel safety	Increased