

Waites Reliability Solution

ROTARY KILNS

CEMENT INDUSTRY
CASE STUDY

IMPROVING OPERATIONAL EFFICIENCY

BY ELIMINATING UNPLANNED DOWNTIME GLOBAL CEMENT MANUFACTURER OPTIMIZES OPERATIONS AND REALIZES 3-MONTH ROI WITH THE WAITES RELIABILITY SOLUTION

A world-leading cement manufacturer, ranking among the top producers globally, operates dozens of facilities producing high-quality cement and building materials. This company, operating a crucial quarry directly adjacent to the plant, faced significant challenges which affected their productivity and output.

THE CHALLENGE

During our initial engagement, Waites identified a significant operational challenge. The manufacturer was **grappling with a severe shortage of skilled maintenance** personnel across its global network of facilities. This gap fostered a reactive maintenance culture that relied heavily on monthly and quarterly third-party vibration analyses.

While these analyses provided helpful insights, they **often arrived too late**, or could **not be acted upon promptly due to the labor shortages**. The company's dependency on reactive maintenance practices led to **severe operational disruptions, costly downtime, and frequent equipment failures**, critically affecting the overall productivity and output across all facilities worldwide. Faced with these pressing issues, the need for a transformative solution was clear—to **bridge the gap in labor and expertise and shift their maintenance paradigm from reactive to proactive**.

OUR SOLUTION

WAITES CRAFTED

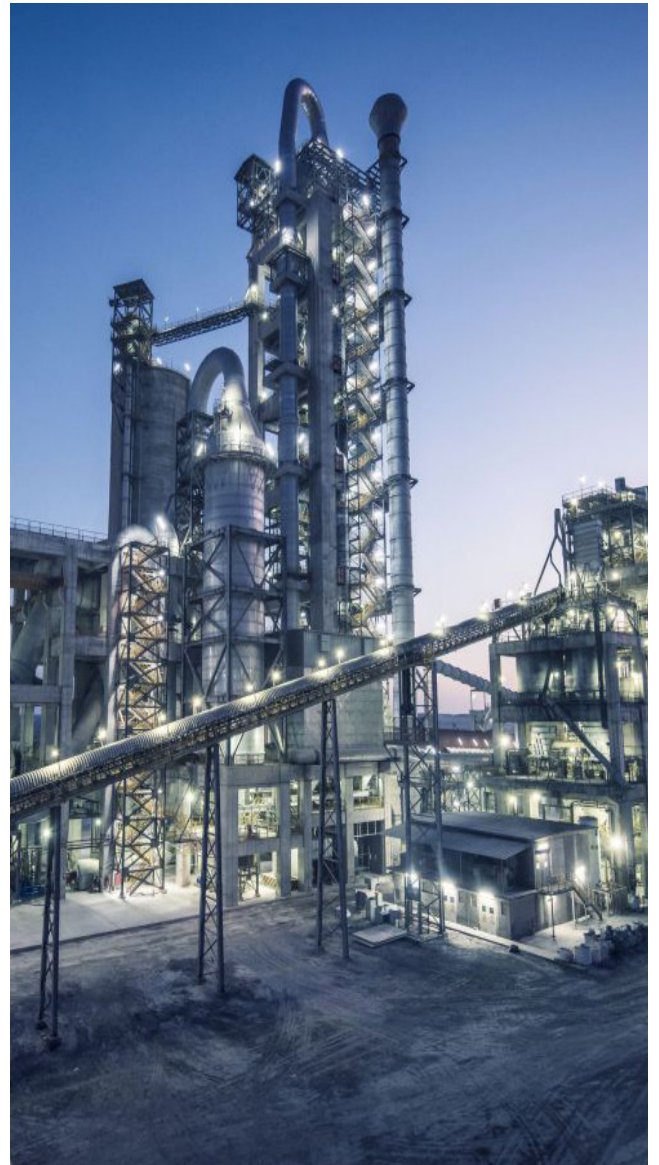
A **DUAL-FACETED SOLUTION:**
“THE HARDWARE” AND “THE HUMANS.”

THE HARDWARE FRONT

Waites provided a broad array of industry-leading sensors tailored to each application. Unlike other providers offering one-size-fits-all solutions, Waites sensors varied in sensing capabilities and form factors, crucial for enduring the harsh conditions typical at cement manufacturing sites.

THE HUMAN SIDE

The solution involved a fundamental change in maintenance operations. Waites conducted comprehensive training with the customer’s maintenance teams on our state-of-the-art dashboard and mobile applications. This training was a pivotal part of our strategy, aimed at empowering their staff to utilize the full capabilities of our system. Our global team of vibration analysts and reliability specialists provided continuous, around-the-clock diagnostics and assistance, ensuring every detected issue was addressed before escalating to catastrophic failures and unplanned downtime.



THE IMPLEMENTATION

Armed with extensive experience in the aggregate and concrete industry, Waites deployed the SM6 wireless vibration and temperature sensor. Designed to withstand the harshest environments, the SM6 detects early signs of mechanical issues such as bearing failures, lubrication, and misalignments. Data from these sensors, transmitted over a robust wireless mesh radio network to a cellular-enabled gateway, allows for monitoring over vast distances with the capability to support thousands of sensors per gateway. This data is then processed in the cloud by advanced machine learning algorithms, detecting known failure patterns and anomalies.

The implementation began with over 400 sensors installed as part of a proof of concept. Following installation, our dedicated customer success team took charge of training the facility personnel on the Waites dashboard. This training ensured that the maintenance teams were not just aware of but fully adept at leveraging our system to fundamentally enhance maintenance operations.


THE SUCCESSES

The predictive maintenance system implemented by Waites yielded substantial successes across the board. One of the most compelling success stories involved a **critical bearing on the rotary kiln**, a vital piece of equipment in the cement manufacturing process. Our system's advanced sensors and predictive algorithms **identified an imminent failure in this bearing well in advance**. The early detection allowed the customer's maintenance team to plan and execute the bearing replacement during a previously scheduled downtime period. This proactive intervention prevented what would have been at least 24 hours of unscheduled downtime, saving the company hundreds of thousands of dollars in lost production and emergency repair costs.

THE INITIAL PROOF OF CONCEPT OF THE SYSTEM WAS HIGHLY EFFECTIVE, PROVIDING A **FULL RETURN ON INVESTMENT WITHIN JUST THREE MONTHS.**

This rapid ROI, combined with the tangible improvements in equipment reliability and maintenance efficiency, encouraged the customer to accelerate the expansion of Waites' solution across their worldwide facilities. This expansion aims to replicate the substantial benefits observed, thereby **enhancing the overall operational efficiencies at a global scale.**

WAITES PREDICTIVE MAINTENANCE SYSTEM



EARLY DETECTION OF A CRITICAL BEARING ON THE ROTARY KILN PREVENTED AT LEAST 24 HOURS OF UNSCHEDULED DOWNTIME SAVED HUNDREDS OF THOUSANDS OF DOLLARS IN LOST PRODUCTION



WAITES

HELLO@WAITES.NET

for more information on how to easily monitor your own vibrating screens (and other rotating equipment) with Waites condition monitoring hardware.

PREFER TO TALK BY PHONE?

CALL (800) 574-WAITES

