

Industry 4.0 for cement production: LafargeHolcim launches the “Plants of Tomorrow”

LafargeHolcim upgrades its production fleet for the future. Targeting a global network of over 270 integrated cement plants and grinding stations across more than 50 countries the company will be utilizing Automation Technologies and Robotics, Artificial Intelligence, Predictive Maintenance and Digital Twin Technologies for its entire production process. This four year program makes the “Plants of Tomorrow” Initiative one of the largest roll-outs of Industry 4.0 technologies in the building materials industry.

A “Plants of Tomorrow” certified operation will show 15 to 20 percent of operational efficiency gains compared to a conventional cement plant. LafargeHolcim is presently working on more than 30 pilot projects covering all regions, where the company is active. The company’s Siggenthal, Switzerland, integrated cement plant will be the lighthouse where the integration of all relevant modules will be tested for the global “Plants of Tomorrow” initiative.

Solomon Baumgartner Aviles, Global Head Cement Manufacturing: “Transforming the way we produce cement is one of the focus areas of our digitalization strategy and the ‘Plants of Tomorrow’ initiative will turn Industry 4.0 into reality at our plants. These innovative solutions make cement production safer, more efficient and environmentally fit. We are moving to fully data-driven operations in order to support further profitable growth as part of our Strategy 2022 – ‘Building for Growth’.”

Among the technologies implemented are predictive operations that can detect abnormal conditions and process anomalies in real-time. This will reduce maintenance costs by more than 10 percent and significantly lower energy costs. Digital twins of plants are created to optimize training opportunities.

Automation and robotics is another important element of the strategy. Unmanned surveillance is being performed for high exposure jobs in the entire plant. Partnering with Swiss start-up Flyability, the company is using drones that allow the frequency of inspections to increase while simultaneously reducing cost and increasing safety for employees by inspecting confined spaces. The concept is now being rolled out to several markets including Switzerland, France, Germany, United Kingdom, United States, Canada, India and Russia.

In addition, the new PACT (Performance and Collaboration) digital tool allows operational decision making from experience based to data-centric by combining data from various sources and enabling machine learning applications.

Open innovation at the heart of the “Plants of Tomorrow”

LH MAQER, the company’s new platform to identify the most impactful technologies and target start-up technology companies also aims at establishing new partnership models with both manufacturing and software companies.

Philipp Leutiger, Chief Digital Officer: “Our global manufacturing expertise in cement is second to none. Now, with our LH MAQER platform, we open up our operating model to the creativity and ingenuity of some of the world’s most gifted and talented digital minds. We are already seeing the success of this approach in many of our operations globally.”

Improving performance through network of data-driven control room technologies

LafargeHolcim has already launched technology to track performance centrally and allocated resources to support the plant network in real time. More than 80 percent of LafargeHolcim's cement plants are already connected to its Technical Information System that provides data transparency at plant, country, regional and global level. Some country operations have more than a decade of historic technical data available. Other systems allow the remote control of certain parts of the operations through online condition monitoring systems. Since its implementation in 2006, this system alone allowed for CHF 80 million in savings and an additional 3 million tonnes of cement sold through less breakdowns.

Watch a video on the "Plants of Tomorrow" [here](#).

About LafargeHolcim

LafargeHolcim is the global leader in building materials and solutions. We are active in four business segments: Cement, Aggregates, Ready-Mix Concrete and Solutions & Products.

With leading positions in all regions of the world and a balanced portfolio between developing and mature markets, LafargeHolcim offers a broad range of high-quality building materials and solutions. LafargeHolcim experts solve the challenges that customers face around the world, whether they are building individual homes or major infrastructure projects. Demand for LafargeHolcim materials and solutions is driven by global population growth, urbanization, improved living standards and sustainable construction. Around 75,000 people work for the company in around 80 countries.

More information is available on www.lafargeholcim.com
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About LH MAQER

LH MAQER is the global innovation platform driving change through open innovation in the building materials sector. It focusses on connecting technology companies to actual use cases in the entire LafargeHolcim footprint, from quarry to construction site.

Inspired by open innovation movements in software development, LH MAQER opens up the entire footprint of LafargeHolcim step by step to new formats of innovation. This includes quarries, manufacturing sites, logistics networks, and sales organizations, as well as the many relationships LafargeHolcim has throughout the value chain, from waste co-processing to construction sites. We are convinced that sustainable and efficient manufacturing and construction will only be achievable by leveraging new ways of working and innovation.

More information is available on www.lhmaqer.com