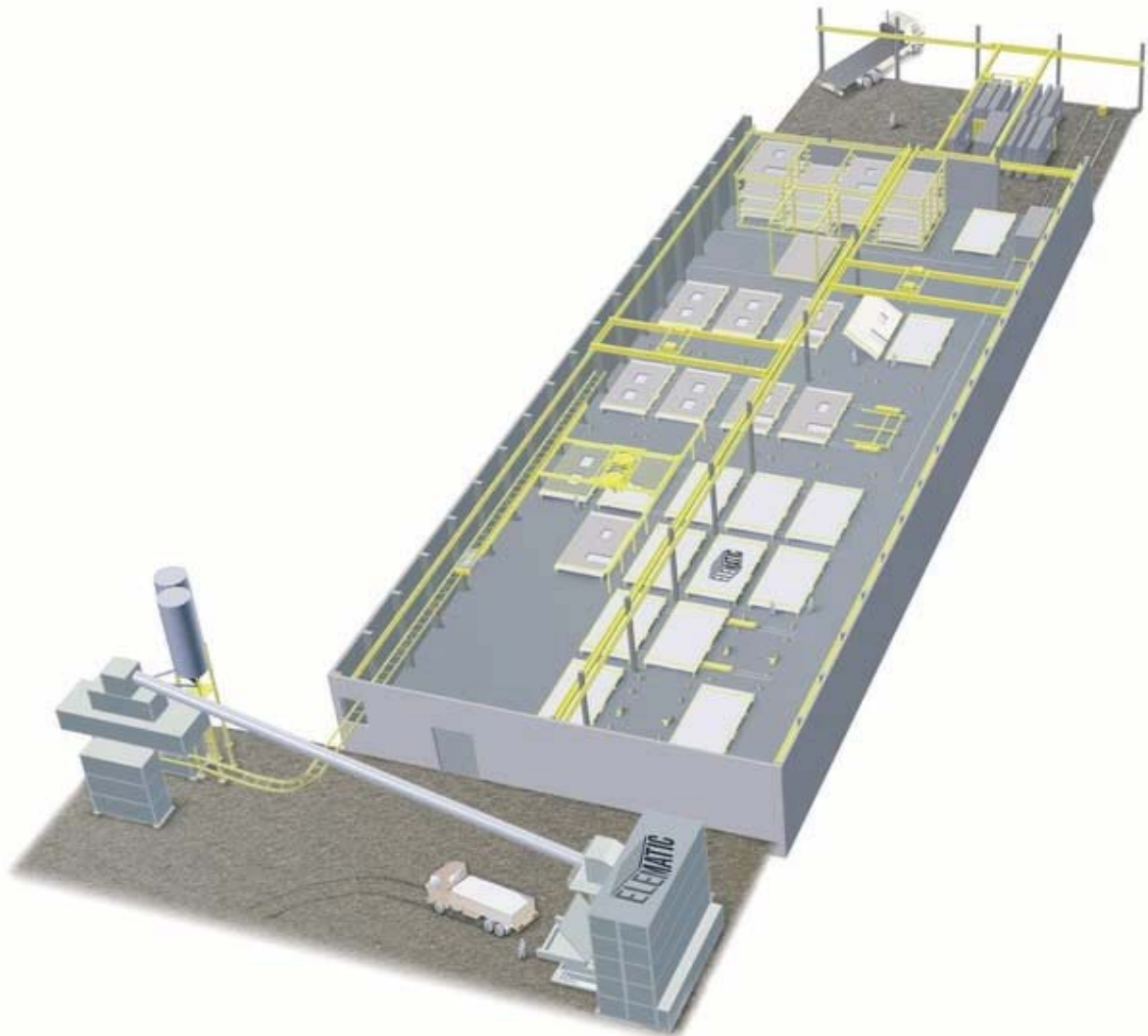


THE ELEMATIC CIRCULATING LINE FOR AUTOMATIC SUCCESS

The Elematic Circulating line is truly flexible: a variety of façades can be made on the same production line. Work phases are transferred from the construction site to the factory, which facilitates planning in many ways. The walls can be erected in any weather and the work continued with on the exterior and interior simultaneously. Architects are happy to note that they have more freedom in selecting surface materials and can design even seamless façades. However, precast manufacturers are the real winners, as they can increase competitiveness and, if the market is hit by a recession, they already have the most cost-efficient production solution ready.



Valkeakosken Betoni in Finland chose the Elematic Circulating line for producing its façade elements. “We developed a new product on the basis of customer feedback, the highly refined VaBe façade element, which is a structural concrete inner leaf with insulation and a prefixed bracket system. We soon realized that we needed new production technology as well. It was a question of daring to leap into something new or to most probably wither”, says Jorma Järveläinen, Sales Manager at Valkeakosken Betoni Oy. “We told Elematic what we needed and they supplied it, a complete production line for the making of our new façade elements”.

Circulating molds worker-friendly

Previously, façade elements were cast with eight fixed molds, which were left to dry when filled. As the workers moved on to the next mold, they carried their tools and equipment with them. Nowadays, the new line functions according to its name: it literally circulates. Workers no longer need to run between molds - they stand in one place somewhere along the line as the mold moves around from worker to worker. The casting system advances above the line and distributes just the right amount of concrete into the molds, minimizing waste. The quality of the element is greatly improved due to the even spread of concrete on the reinforcement.

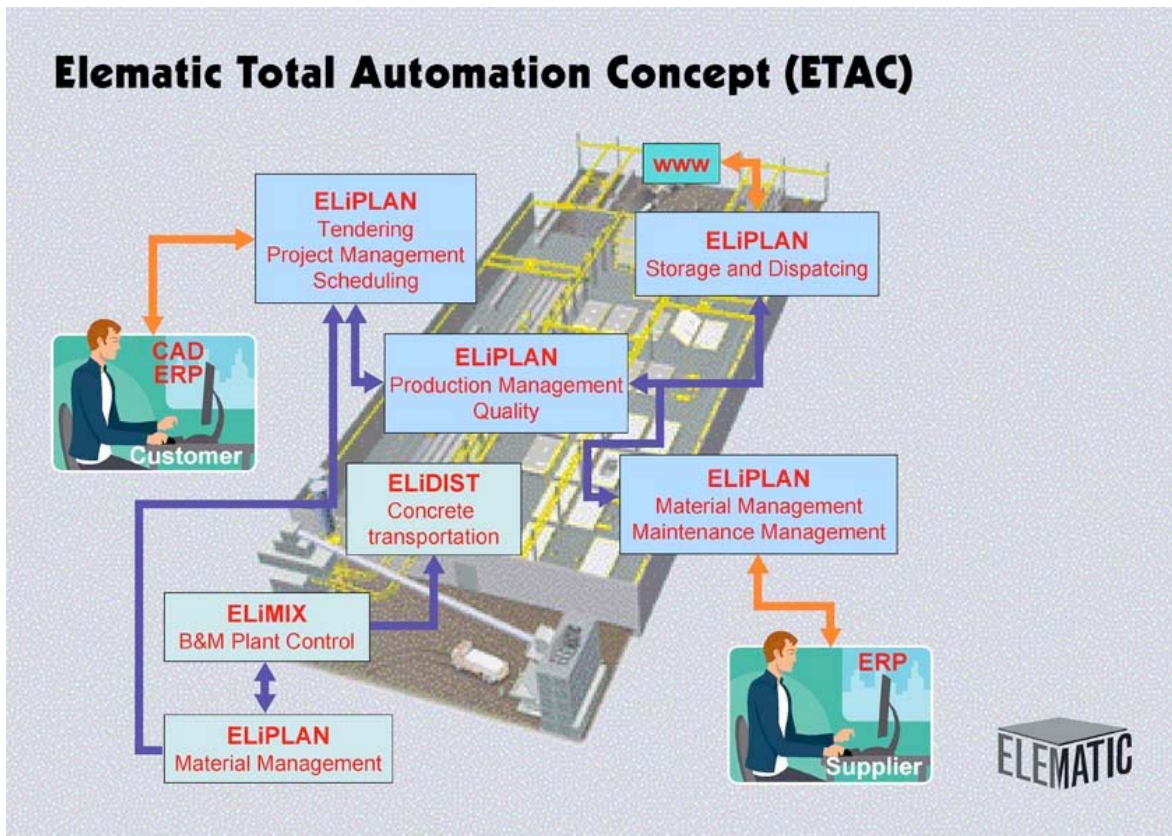
Doubling or even tripling capacity

“The most valuable benefits of the new line are definitely the increase in efficiency and capacity: production can be boosted almost threefold, as previously 8 fixed molds needed to dry before the next batch was started, and now we can circulate about 20 molds in 24 hours in a space of roughly 1000 m² and work in 2-3 shifts, if necessary”, describes Mr. Järveläinen enthusiastically. We are definitely looking at the future with confidence, as we believe that our facilities can be run on almost maximum efficiency and return the capital we have invested within a very short period”, says Mr. Järveläinen.

Automate as needed

The Elematic circulating line is naturally equipped with its own specific automation. However, Elematic also offers a total automation concept especially designed for precasters to even further enhance efficiency and control of the entire production chain. This system consists of modules that can be purchased one at a time and expanded in pace with growing requirements and prospects. Any data only needs to be input once, which greatly lessens the risk of human errors. The data then moves seamlessly through the system, from planning to production and on to delivery and invoicing. At the heart of the automation concept is ELiPLAN, the Elematic production planning system.

ELiPLAN at the center of control



What does this mean in practise, then? From ELiPLAN, the product and material information moves on to ELiLINE. This module controls the actual production line; what products are to be made on a daily basis, for example, and where along the line a mold is at any given time. The product data includes, for example, the dimensions of the product to be cast and the location of openings for doors and windows. If a laser is used, the locations of side forms and openings can be reflected directly onto the casting beds; entirely leaving out manual measuring.

Along the production line, workers are provided with information on what products to cast in a report generated from ELiPLAN. Each worker can access information related to his or her point along the line. For example, one worker takes care of the reinforcement and checks what type is needed and the measurements for these. At another point, the locations for side forms and magnets are planned and marked.

When the slab has been cast and its surface evened, it goes to dry; the line control calculates the maturity time. Often circulating lines operate on a one-day-round basis, but if you have an elevator on the line and pile the pallets to dry, you need to control the order of these, which is done with ELiLINE.

The dry slabs are next either lift onto a tilting table for finishing or moved to the storage. At this point, the information that the product is ready is acknowledged in ELiPLAN. The bar code data is fed into the system and reveals where the product is stored. This data comes in handy when it is time to handle the delivery. From ELiPLAN, a dispatch list is generated. After this, ELiPLAN goes on to handle the data needed for invoicing and passes on this information to the financial management of the company.

Wanting the latest technology

At Lipa Betoni in Central Finland, the setting up of a new production line for façade elements had dramatic beginnings. In the words of Mr. Matti Lipsanen, Managing Director of Lipa Betoni: “Our old production facilities were totally destroyed in a fire last year. Once we had made the decision to rebuild, we wanted to acquire the latest technology. Looking around for a supplier, the competency of Elematic convinced us and their active involvement in the entire project, including planning and realizing, was very reassuring”.

Today, Lipa Betoni can produce high-quality sandwich wall elements in several efficient shifts. They are pleased with the highly automated new system and are looking forward to adding further automation later. The material logistics has also improved, along with the overall quality of the products.

Circulate to success

Mr. Mikko Isotalo, Production Manager at Luja Betoni in southern Finland is satisfied with their newly acquired Elematic circulation line. “There is increasing demand for seamless façades and surfaces made of different materials. We needed an efficient solution to produce façades and intermediate walls, and this line can do both. As these are meant to be inexpensive bulk products, they need to be produced cost-efficiently and quickly. Elematic was able to commit to a very short delivery time and the comprehensive system seemed very reliable – it was an easy decision”, Mr. Isotalo concludes.

New from Elematic

At Elematic, new automation modules and functions are constantly under development. Soon to be introduced is the semi-automation of side forms and magnets. In the future, these will be fetched by a machine from a specific location and placed onto the casting bed approximately where they will be needed. Yet another means of saving time and lifter capacity!