

Masa GmbH, 56626 Andernach, Germany



Oldcastle APG enhances position in high-growth market with new Ridgeway plant

With origins in the Carolinas dating back to 1946 through its purchase of Adams Concrete, Oldcastle APG has become the region's leading supplier of concrete hardscapes, block, and bagging products. A CRH Company, Oldcastle APG's position as North America's leading provider of integrated and sustainable outdoor living solutions is reinforced through ongoing strategic enhancements, such as the addition of its newest site in Ridgeway, South Carolina.

The concept was to build a hardscapes plant outfitted with modern technology that would provide capacity for its cus-

tomers with face-mix capability, the latest in quality controls, and advanced automation. The desired outcome was to produce top quality and high-capacity throughput for a full range of hardscapes products and solutions to meet growing customer demand.

In its journey to completion, the project encountered challenges. While construction was planned and approved prior to the Covid-19 crisis, site conditions combined with disruptions from the global pandemic created paradigm shifts in services, supply chain processes, and much more.



The new Oldcastle Adams Ridgeway plant is located just outside of Columbia, South Carolina and is producing high quality products in high outputs to service the regional market

"The project's successful execution, despite the challenges presented by Covid-19, is a testament to the expertise and teamwork of everyone involved," said Colin Clampett, President of Adams Concrete. "Project Management across Oldcastle APG, equipment manufacturers, engineers, and local officials all came together to get the Ridgeway site across the finish line and the plant is now fully operational."

Challenge I: The Site

An available building at the Fairfield County Industrial Park presented an advantage for completing the project in a timely manner without needing to start anew with full building construction. Although the height of the building and interior columns presented engineers with complexities, they were able to carefully adapt their designs to create a highly effective operational result.

Additionally, a seismic zone and limited soils capacity required collaboration between Oldcastle APG engineers and a local engineering team to develop a unique foundation without derailing project feasibility.

Challenge II: Covid-19 and Supply Chain Breakdowns

The project installation took place at the peak of industry disruptions, supply chain breakdowns and a global health crisis

resulting from the Covid-19 pandemic. Fortunately, Oldcastle APG was able to forge ahead despite impediments.

"We suddenly had to adapt our health and safety protocols and processes overnight," stated Randy Foster, Project Manager at Oldcastle APG. "Keeping everyone safe while constructing a new plant with multiple supplier installation teams working together while meeting Covid-19 safety requirements was something we had never done before."

The pandemic by-product of supply chain breakdowns added pressure to an already robust workload. Scarcity of resources and key inputs required the team to find creative solutions to meet heightened demand. Through perseverance, dedication and teamwork, the project was completed on time.

"It was not easy, and we had to think outside the box to find inputs that we were told were not available at all or within the required time frame," said Foster.

The installation is a mix of suppliers

The core element of the plant is a Masa XL machine which is the same size as the rest of Oldcastle APG's production supply stable. Added to the design of this site is the large capacity kiln, pallet buffer, automatic quality control for height and product density, unique built-in maintenance accesses, and multi-color blending for both main and face mix systems.

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At Masa, we think of nothing but concrete – and how to shape it for the building materials industry. The machines we design and build are used for the production of concrete blocks, pavers, landscape products, as well as sand-lime bricks, aerated concrete blocks and panels. In other words, we are real concrete heads with a passion for reliable, high-performance machines.

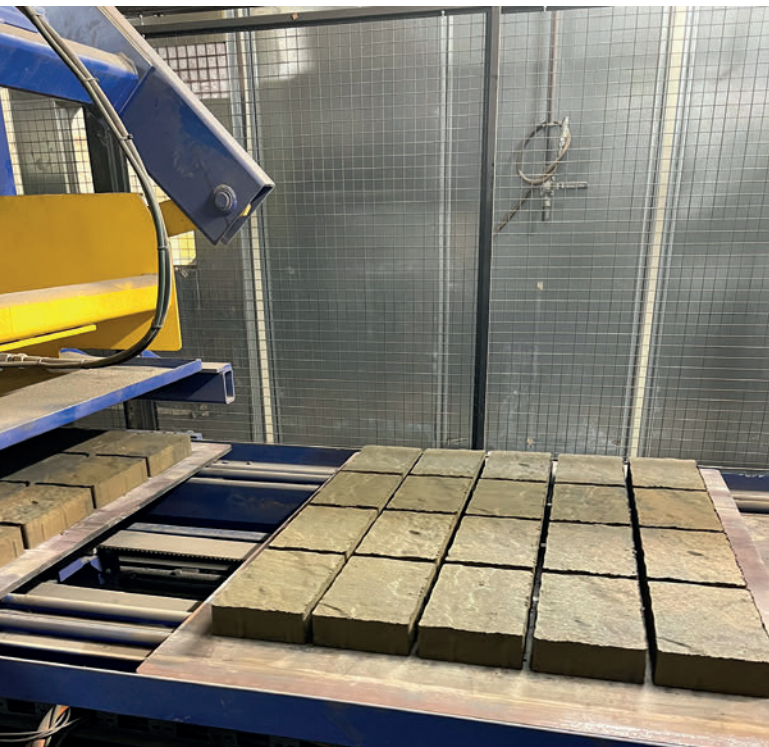
One of our smart concrete heads, Gina Weber, has co-developed a solution that clearly visualizes the available digital machine data across all sites in one dashboard. As a result her work enables concrete block manufacturers to draw faster conclusions about the productivity of their plants and makes it easier for them to uncover valuable insights to optimize their operation.

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A full range of products, from commercial Belgard® pavers, landscaping flats, thin products, SRW walls, edgers and other garden specialties to CMUs, with or without face mix, are made on the Masa XL 9.1 machine.



Real time animated controls allow the operator to see all processes at any stage from multiple screens.

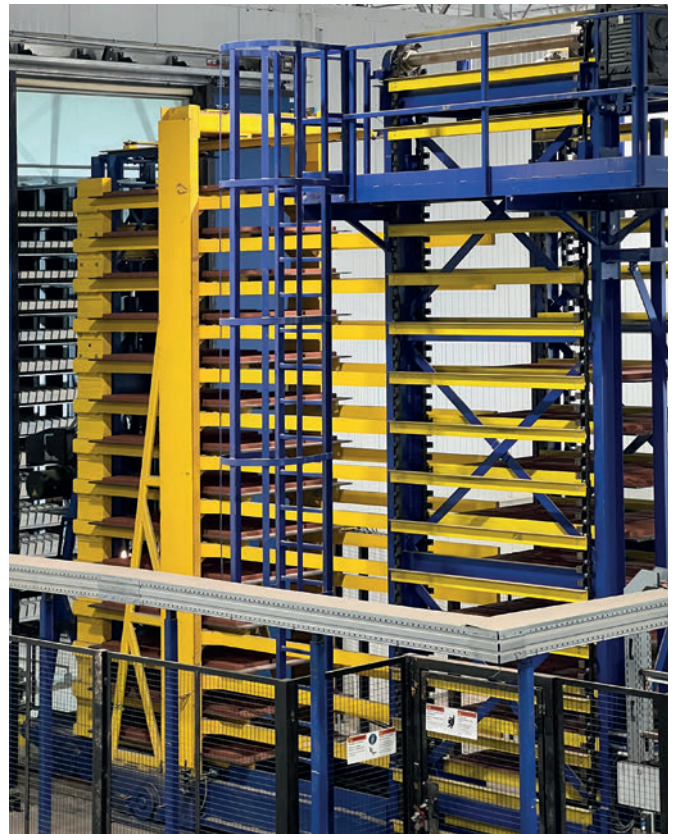
Six coarse aggregate bins, combined with one split aggregate bin for face mix, all supplied by Standley Batch, begins the operation. Three cement silos feed the two Haarup 3750L main mix and 500L VM face mix mixers. Color hoppers below the mixers provide for measured flow to the multi color blending system. Eagan Controls were used for the aggregate batching, mixing, and feed systems.

The Masa XL 9.1 - matched to a broad range of products

Once mix is delivered to the machine, the Masa XL is perfect for the broad range of products produced at the Ridgeway plant. Equipped with Servo vibration allows rapid changes to the vibration forces from the control desk to optimize the production from simple landscape flats to a full range of hardscapes, including Belgard® commercial pavers, segmental retaining walls and concrete masonry units if needed in the future; all made on this one machine with precision and high efficiency.

Curing Plant, Ring Plant and Ancillary Equipment

The single room curing plant is filled and emptied by a 14-level double lift finger car. This heavy capacity, fully rotating finger car system, features bolted on fingers for ease of maintenance. A V-belt conveyor on the dry side aids in maintaining low dry side cycle speeds to ensure maximum daily output. A centering device, doubling and a low-tension strapper



Masa finger car operates within the single room curing chamber.

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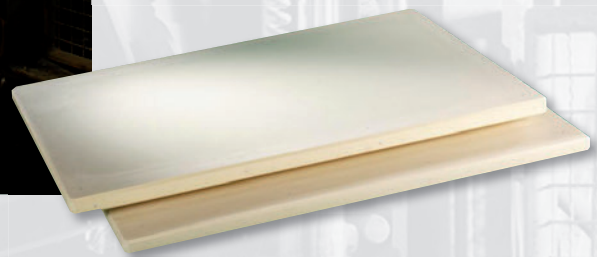
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CDS Active Curing Chamber Environmental control maintains temperature and humidity.

make up the remainder of the dry line components prior to the cubing function.

A CDS active curing system maintains temperature and humidity independently and automatically without stratification through-out the kiln. The CDS system uses mass air flow in conjunction with the humidity and temperature control pro-

viding the user to dial in the best set points for the specific product to obtain consistent and repeatable results.

The large plate pallet buffer rack fed by a pallet buffer car between the rack and wet/dry side lines ensures flexibility when speeds between wet and dry sides vary due to different product speeds or short stoppages during production hours. Automated shipping pallet insertion by utilizing a pallet grab system provides rotational options for the pallet placement. A stretch wrapper finishes out the cubing line. Slab Innovations provided an automated tumbling system offline.

Quality Is Priority

Delivering superior products for its customers is a top priority at Oldcastle APG, which drove the decision to develop the new plant. Consequently, to assist in the operation, systems for automatic measurement and real-time metrics reporting were included.

An in-line weigh system for product density and a laser system to measure height provide immediate feedback, which were two aspects of this directive that were supplied by Masa. A production pallet dumping device on the wet side allows for other quality checks.

Experienced leadership and pre-launch training has yielded great dividends, according to Gary Ewell, Regional Vice President of Operations at Oldcastle APG.



Masa's electro driven cuboter precisely places the layers on a conveying system and creates accurate cubes without damaging the products.



,Thumbs up' for the new plant in Ridgeway.

"From the get-go, this plant has made high-quality product very efficiently and has already proven itself as an asset to production," said Ewell. "We look forward to many long years of continued output and service to our customers." ■



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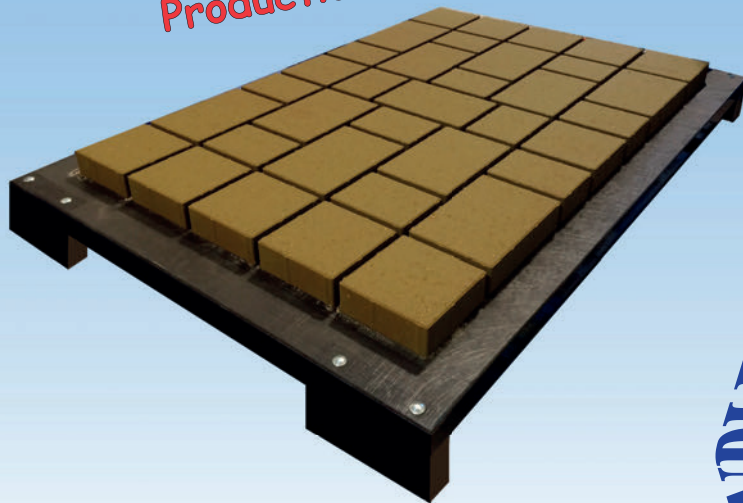
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