

# GCC moves to the technological forefront in the constructions materials industry

When Grupo Cementos Chihuahua, GCC, of Mexico decided to build a new block, paver and architectural products production facility in Juarez, Mexico the decision was made to employ a Kraft Energy accelerated concrete curing system in order to maximize production efficiency, while improving the characteristics of the finished product.

After 8 months of production, an overall 35% to 40% energy cost savings and a minimum of 10% cement savings with significant gains in product quality and uniformity have proven the decision to install the vapor curing system.



*The dedication to efficiency is evidenced in this picture of the organized and clean environment and production building in Juarez, Mexico.*

GCC, with 3 modern block plants operating in Juarez, Mexico, decided to add a 4th plant in 2006. Factors including the city of Juarez ranking 5th in Mexico in terms of population and economy, borders with additional areas of high growth and the vibrant growth of the dynamic metropolitan area led to the decision to augment the production of blocks with architectural products, such as pavers, flagstones and "Y" precast elements in a variety of colors. These parameters in

addition formed the basis of GCC's search for plant technology and equipment. The net result is a plant producing 2.3 faster than any existing plant.

"We have had a history of successful growth by increasing our production capacity and through acquisitions in 2006, as well as the quality of our human resources and the incorporation of technological advances" commented Engineer Manuel Milan, General Director of GCC.

GCC undertook a worldwide investigation for manufacturers of concrete production equipment. Alternatives in manufacturing style as well as levels of technology were compared. The investigation led GCC to accept the European production model adapted to the requirements of GCC including minimal mould change times and production of pavers incorporating the "face and base" mix design, the market growth rate and the customer requirements. After studying several options, the final decision was made to proceed with a trilogy of companies, including Galletti - planetary mixer with a capacity of 2 cubic meters every 2 1/2 minutes, Quadra - "face and base" production machine, transport and packaging equipment and Kraft Energy - concrete vapor curing system and insulated curing chambers.

The results are astounding. The plant produces 5,760 concrete block per hour - enough on a daily basis to build more than 900 apartments of 50 square meters each. The plant produces over 234 square meters of concrete pavers per hour - more than 5,500 square meters daily with a totally automated production facility that combines state-of-the-art technology from Germany, Italy and France. The plant is operated by a total of 6 personnel per shift.

Thanks to the multiple talents of the operators as well as the level of equipment automation and as a result of continuous improvement, their ability to quickly respond to changes and the dedication of GCC's employees, GCC has been recog-



nized in 2006 with 1st place among leading companies in Mexico by the business magazine *Gestion de Negocios* in a study conducted by the Hay Group.

Back to the production facility, since the production of masonry units was a given, the key was to have a plant with the flexibility to efficiently produce other types of shapes of products with the same machinery. A variety of products such as curved units for prefabricated slabs, curbs and pavers as well as a variety of architectural block were required to meet the needs of the local market. The final solution allows GCC to manufacture products from 4 cm to 35 cm in height and up to 130 cm in

*The fully automatic transport equipment loads and unloads the Kraft Energy supplied galvanized racks with insulated walls, ceiling and roller shutter doors. Vapor Curing provides for uniform quality and reduced curing costs.*



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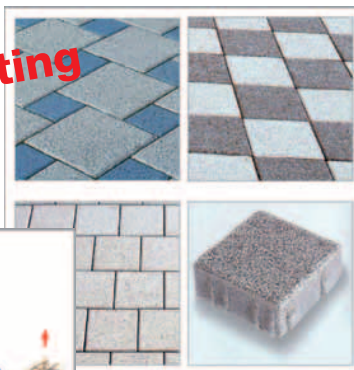
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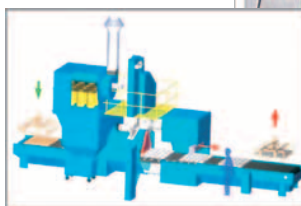
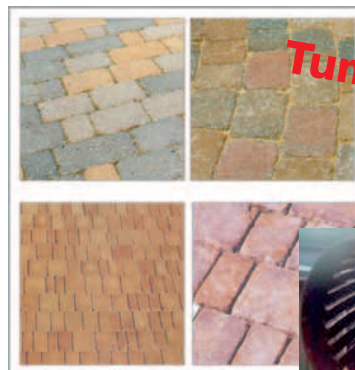
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Engineer Manuel Milan, General Director of GCC, is leading his company to double digit growth while garnering awards 1st in quality of all Leading Companies of Mexico in 2006 and certified as one of the best workplaces in Mexico year after year since 2004.

width and length. The equipment also allows for the production of pavers with a face mix over a base mix – allowing for material cost savings, denser surface and overall stronger product. Finally, the dramatically reduced mould change time allows for efficient production of a variety of products.



Vapor Generator Series VS

The selection of equipment, technology and plant design has paid off handsomely for GCC. An initial comparative study with existing plants indicates a production rate 2.3 times faster with a reduction of 10% cement without compromising product quality or aesthetics. The highly efficient Galletti mixing plant and its ability to continuously feed the Quadra production machine provides a doubling of the production capacity compared to existing plants. The vapor curing system featuring the increased surface density benefits of carbon dioxide curing and completely automatic curing controls allowing for the regulation of the curing environment by Kraft Energy has provided a 35% to 40% energy savings as well as optimal uniformity in the curing environment – preventing condensation and unwanted inconsistencies in the finished product from shift to shift. The design of the curing system by GCC and Kraft Energy incorporated the selection of quality galvanized pallet racks, insulation to reduce energy costs and automatic motorized rollershutter doors.

The achievements of GCC's newest concrete production facility in Juarez, Mexico appears to be another example of how this fast growing conglomerate's investment in people, quality and technology are paying off in the marketplace.

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