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International architectural projects: modernisation of the Stade Roland Garros in Paris

■ Holger Stichel und Stefanie Schaarschmidt, Kobra Formen GmbH, Germany

Located in the 16th arrondissement of Paris, the Roland Garros Stade looks back on almost 100 years of history. Built in 1927, it is the venue of the second annual Grand Slam tennis tournament - the French Open. Since 2014 the tennis complex has been modernised. The complex was expanded from 8.5 to 11 hectares, areas were redesigned and, among other things, a new court with 5,000 seats, the completely new Fond de Princes area and buildings for organisation and PR were constructed.

The Alsace-based company Société Heinrich & Bock was commissioned to manufacture concrete blocks for the entire exterior layout of the complex and supplies selected products that fit perfectly into the new design concept in terms of surface and colour characteristics as well as functionality.

Heinrich & Bock has been developing and producing innovative and high-quality concrete blocks for both the public and private sectors for over 50 years. The family-owned company manufactures at its sites in Steinbourg, Krautergersheim and Wittenheim, and sells its products in France and other Euro-

pean countries. The managing partner Patrick Heinrich, who has led the company for many years, is supported by his children Sébastien and Nadia, among others, who also work at Heinrich & Bock and are involved in central divisions.

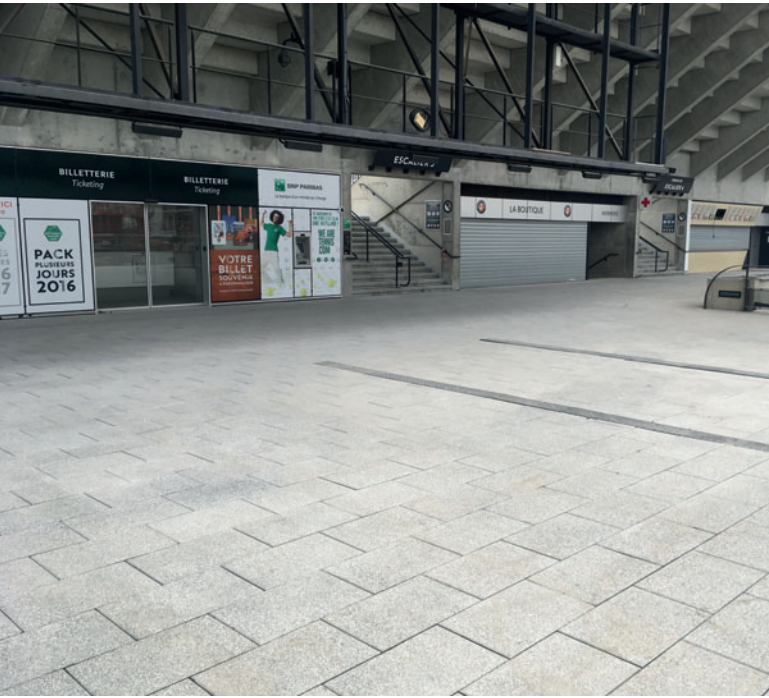
The tender for such a major project was demanding and tedious. Patrick Heinrich explains the special features and specific requirements: "The first step was to redesign the outside area of Court Suzanne Lenglen, on which natural stone had been laid before the modernisation. This was still the preference of the responsible architects. In comparison, however, concrete blocks offer the advantage that the identical recipe and thus a consistently high quality can always be guaranteed. Furthermore, we can provide our products with technical properties, for example, surface texture or optimum protection against displacement. From our point of view, therefore, concrete blocks were clearly preferable to other building materials from the outset. During the development phase, a natural stone from the complex served as a sample. Different stone heights of 8, 10, 12 and 14 cm were required, which we manufactured in a test production. After the first concrete



Detail view of concrete slabs



Laying in pedestrian areas



Laying in the entrance area

block samples had been viewed and discussed by the decision-makers, more than 50 further tests were carried out, in which all specifications regarding block dimensions, surfaces, colouring and technical properties were successfully implemented".

The decisive argument for the Société Heinrich & Bock products was the horizontally and vertically self-locking spacers of the patented development Keops+, which distribute any load over the entire surface due to their composite action. The individual stones can neither shift nor twist, so that the laying remains permanently robust and stable. Société Heinrich & Bock transferred the Keops+ system to large-format slabs and in August 2017 installed a test area of approx. 500 m² directly at the entrance of the former stadium, which was regularly exposed to high traffic loads. Once the system had proven itself, the company was awarded the final contract and could start production.

Boltline 1 with Flexshoe

"We manufacture all concrete blocks for this project in Kobra molds and chose Boltline 1™ technology with Flexshoe™ for this purpose. For us, the modular concept of the mold offers greater flexibility and cost-effectiveness in production. We produce at high cycle rates and with this system we benefit from the fact that wearing parts can be replaced in a targeted manner. Stone tightness and surface quality are subject to strict specifications from the client. Our experience is that Flexshoe gives better compaction results on the block, a constant stone height and a well prepared surface for the finishing process, as the concrete blocks are sandblasted, curled and hydrophobised in line. This produces a matt-gloss, very



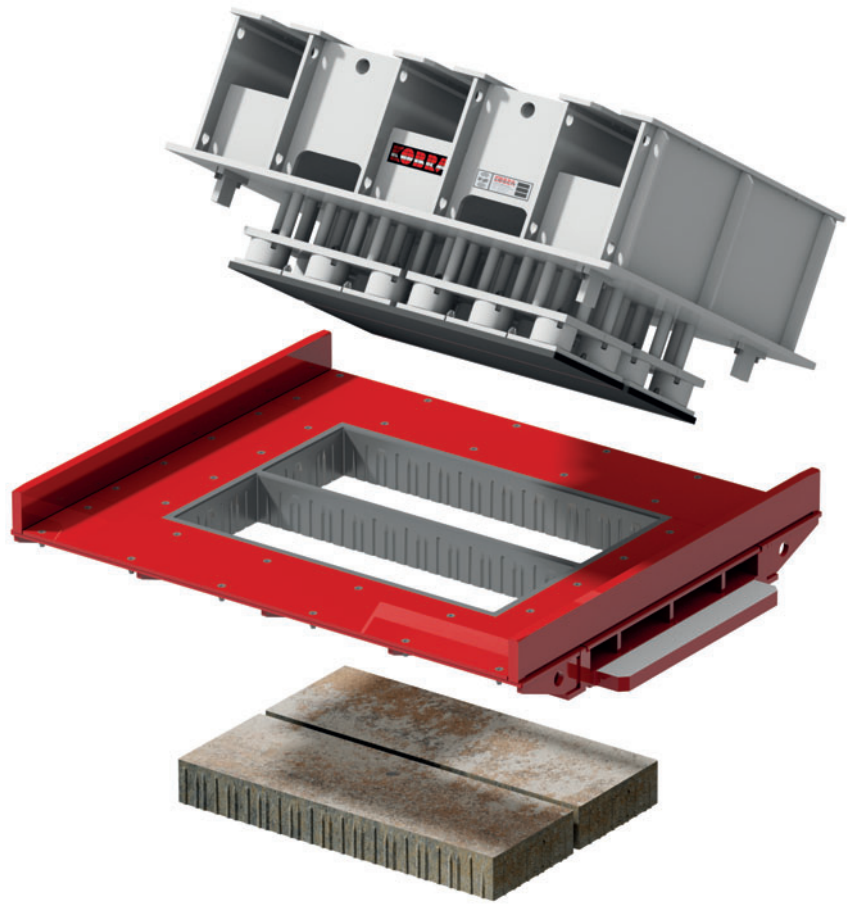
THE COLORIST THE ADD ON UNIT FOR SOPHISTICATED COLOURED CONCRETE BLENDING (FACE MIX OR THROUGH MIX)

- THE DESIGN OF THE COLORIST ALLOWS THE BLENDING OF UP TO 6 COLOURS
- THE MODULAR DESIGN OF THE COLORIST ALLOWS THE INTEGRATION TO ANY PAVER / BLOCK MACHINE
- THE SYSTEM IS EQUIPPED WITH ITS OWN CONTROL UNIT TO ALLOW AN EASY IMPLEMENTATION OF A SIMPLE SIGNAL HAND SHAKE
- NO REPROGRAMMING OF THE EXISTING PAVER / BLOCK MACHINE PLC NECESSARY
- THE MOVEMENTS OF THE COLORIST ARE FREQUENCY CONTROLLED TO FINE TUNE THE COLOUR BLENDING TO PERFECTION
- HIGH REPRODUCIBILITY OF A ONCE DEFINED BLEND
- THE BLENDING PARAMETERS CAN BE STORED IN A RECIPE FUNCTION

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smooth surface that is dirt and water repellent. In this comparatively complex manufacturing process, we produce very high quality and durable products whose characteristics during the tendering process were the decisive factor in favour of concrete blocks over other building materials," explains Patrick Heinrich.

The area of the Stade Roland Garros will later be extended by 2.5 hectares. "The project is still in the construction phase and is not expected to be completed until 2021. So far, we have delivered over 10,000 m² of large-format pavers. We also produce other concrete products such as tree surrounds, which always match our concrete slabs in design and properties. All pedestrian and vehicle areas including the parking spaces were equipped with our products. That makes us very proud. On the whole, the project is a nice challenge for us and has been technically very challenging. Thanks to our know-how, as well as that of our partner companies, we were able to develop and manufacture the best possible product and thus make our contribution to the redesign of the traditional tennis complex". ■



Concrete block mold Boltline 1 with product

Boltline1™

Boltline1 is used for large format pavers and high products such as hollow blocks, solid blocks, kerbstones or rounded kerbstones. The mold insert is made up of individual walls which are plugged and bolted into each other and can be replaced independently in case of repair. The four-part frame is also mounted around the mold insert with bolted connections and can be reused when changing wearing parts. Even the replacement of the cover plates is possible with this system without any problems.

In the case of hollow block molds, the modular concept is continued through to the core assembly. It consists of individual elements that are bolted together. If one core is defective it can be replaced with no great effort.

Key facts

- Very high dimensional accuracy due to production according to Kobra quality standard
- Modular concept for higher flexibility and cost-effectiveness in your production
- Plugged and bolted connections for targeted replacement of wearing parts

- Continuous hardness structure without welding seam
- High dimensional accuracy and low wear due to Form Optimill carbo™ or Form Optimill carbo 68 plus™

Flexshoe™

The Flexshoe feature can be a useful compaction aid, especially for large format products and special formats. The rubber-mounted tamper shoes provide for better compaction results and higher surface quality of the stone. Flexshoe prevents the uneven lifting of the tamper shoes off the stone and ensures an optimised tamper shoe play on account of the damping effect in the tamper head.

Key facts

- Better compaction results for large products and those that are difficult to compact
- Optimal vibration utilisation in the stone field
- Constant stone height and perfect surfaces
- Higher damping effect and stability of the tamper head



Heinrich & Bock stone garden

FURTHER INFORMATION



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KVM International



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Integrated control systems for the complete plant.



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