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New block plant for Peranco Ltd – Cyprus

■ Ferry Jakobs, Hess Group GmbH, Germany

Not that long ago the Cypriot building industry had a very difficult period. The financial crisis hit the country very hard and the National Bank of Cyprus had to take extreme measurements to save the country financially, this is locally known as 'the haircut' where every company and individual lost a lot of money. The economy collapsed and Cyprus went in recession with hardly any building or construction activities at all. The country has slowly recovered from the crisis resulting in new developments and bigger infrastructural projects, which have been announced. Some of these projects have already started. Although the number of building projects has not come back to the level from before the crisis the contracting companies have also planned new investments. One of them is the Cyfield Group, who has decided to build a new block plant in Nicosia, the capital city of Cyprus.

The Cyfield Group is a major player in the construction industry with all kinds of different activities, working with about 20 different subsidiary companies also active in Greece, Egypt and Oman. For the new block plant they formed a new company called Peranco Ltd in close corporation with their existing building products companies Nemesis Beton Ltd and Nemesis Precast Products Ltd. The objective for this plant was simple; build a concrete factory that is capable of producing all kind building products including ones for road construction. Product quality should be better than available on the existing market and the production level should be more than enough.

Hess Group was selected to be the supplier of the concrete products production plant and the production machine for this project is the RH1500-3MVA. This block machine is a high-



Batching plant



RH1500 with colour mix face mix



Feeding the RH1500 with production boards and concrete

end block machine with many small, but very nice, features to make excellent concrete products. The most important feature Peranco demands of the new block plant is consistency, consistency in production output, consistency in production quality; all aims are set to the highest quality standards. To meet this goal Peranco appointed Mr. Riccos Nicolaides with his team on behalf of Cyfield Group as project manager, supported by the Hess Agent in Cyprus and Greece the company Pranovia.

After agreement of the technical details the first step was to make the building suitable for its purpose and to prepare the layout of the plant in such a way that it would fit into the building with inner dimensions of only 20 x 60 meters. In order to have enough curing capacity the roof was lifted over 2,5 meters creating space enough to have high curing chambers. The second step was to find a location for the batching and mixing plant. The Greek company Koutousis S.A. from Athens came with good proposal to put the mixing plant alongside the block machine. The concrete is brought to the Hess RH1500-3MVA via short conveyer belts, coming in from a 90 degrees angle to the machine hoppers. The plant is capable of making face mix products with all kind of colour variations. The different colour blends can be made by either the mixing plant, through the different extracting belts of the face mix system, or via the Colormix drawplate system, which is a part of the block machine. A combination of these two options is also possible. Pigments can be dosed in both mixers with a dry-wet dosing system supplied by Würschum. The two mixers are having a high filling capacity and a relatively short cycle time so the output of the production plant is designed for high volume production, even ready mix concrete can be made. The demand Cyfield has for their own

road construction companies in kerbstones is enormous, these products require a high volume of concrete. On the other hand, they also need a lot of slabs for these projects, 35 mm high with face mix. The means a more flexible approach in volume of concrete. The batching plant is fully prepared for that task.

The third step was to study the product pack requirements and the Cypriot way of sending products to their customers is on shipping pallets with plastic wrap around the pack. So the products are leaving the production plant on shipping pallet and a Messersi wrapping machine is putting a nice tight film around it.

The Hess Multimat RH1500-3MVA is a high-end block machine, which can handle a wide range of production board dimensions, for this plant a production board 1.400 x 1.100 x 50 mm is used. Since the climate on Cyprus is very stable the decision has been taken to use MyWood pine dovetail pallets. To keep the pallets in condition a protective spray is used every cycle.

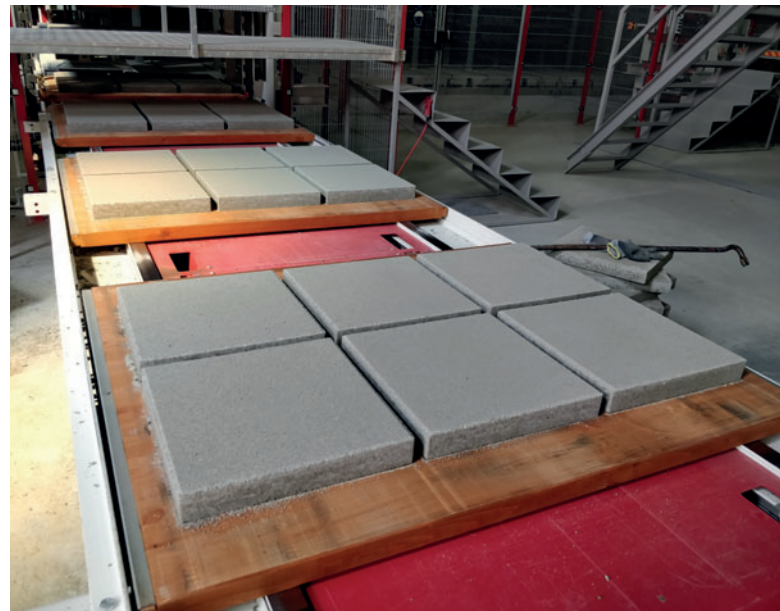
The machine is suitable to make products up to 400 mm, although this product height will not be needed for Peranco. The standard production range the Hess RH1500 block machine can cover is very versatile. A standard block plant can make thin slabs, normal block paving, concrete bricks, full blocks, hollow blocks, thin wall hollow blocks, kerbstones and heavy retaining wall blocks. The machine is equipped with a separate draw plate mechanism so that products can be manufactured with a profile or a marking in the bottom, or a draw plate can be used to ensure that the production boards are only used for transportation during the manufacturing process of the concrete product.



Finger Car system



Dry side with Topwerk Electric cuber



Slabs

The vibration table is a proven design, the Hess Group oil bath vibrating system. This maintenance free vibration table is using the VarioTronic vibration technology, which enables the user to set freely both the amplitude and the frequency during the different steps of the production process. All the different parameters are saved in product related recipes so the settings for the production of high kerbstones will differ from the settings for the production of slabs. A mould change only asks for the correct recipe and all parameters are changed automatically.

Peranco decide to have the M version of the Hess block machine, the high-end solution for control of the manufacturing process. This technology enables Peranco to have full and precise control over all hydraulic movements in the block machine. This means very accurate controlled variable stroke length of the cylinder with optimized acceleration and deceleration speeds. The tamper head has two hydraulic cylinders, which are individual controlled with the result that the tamper head is always level. The positioning of all the hydraulic cylinders on the block machine is very accurate and all positions are monitored permanently. The result is that the blocks are almost perfectly level and the height of the blocks is within 1 mm over the full production board, but also over a longer period of production.

The face mix section is obviously equipped with the patented Hess driven face mix roller. The filling aid has proven itself as being 'absolutely necessary' when it is about precise filling of slabs or other elements with a big top surface. The roller guarantees that the filling of the mould is even from corner to corner.



Cuber and shipping pallet hopper



Manufacturing Excellence

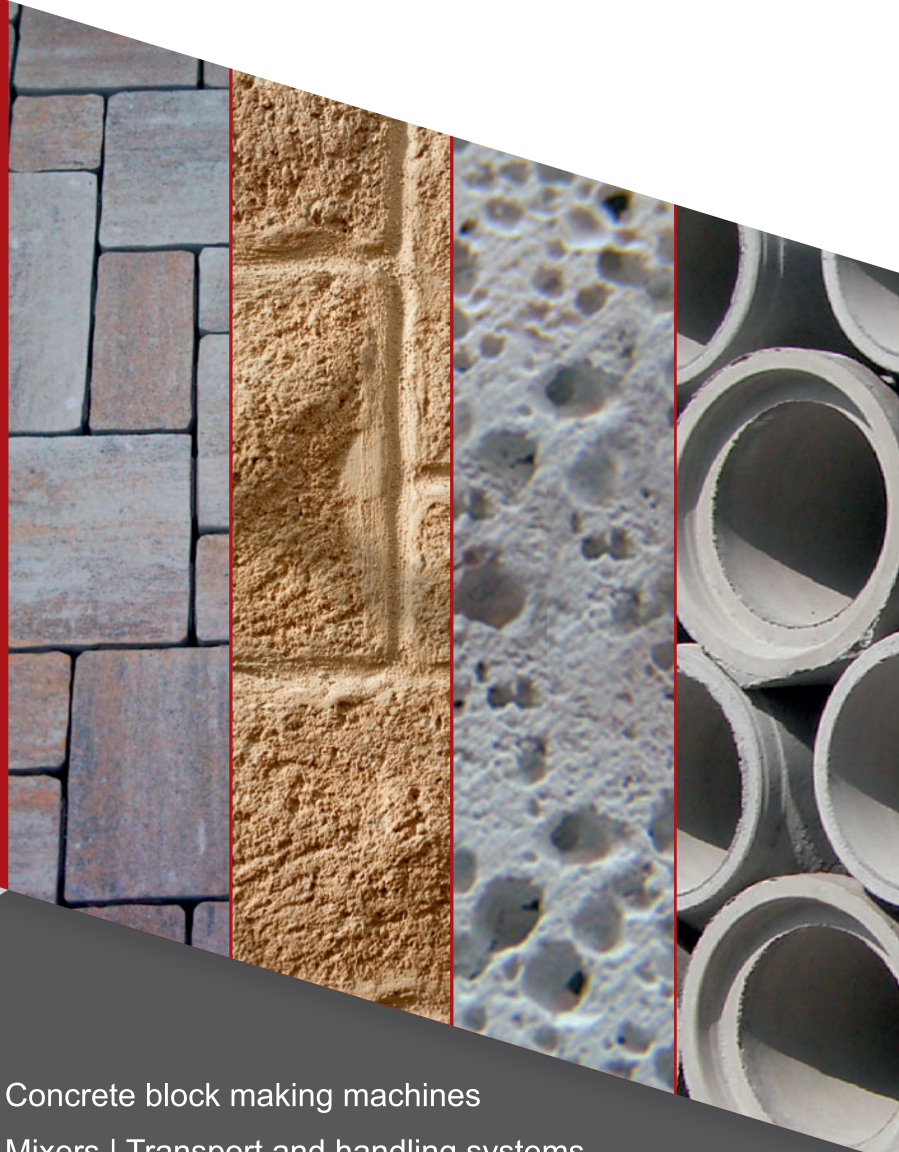
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Concrete block making machines

Mixers | Transport and handling systems

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Machines for concrete infrastructure products

AAC plants | Value adding lines

and systems



Packaging of the products



Packs on the exit conveyor

ner, forwards and backwards. Especially when the final product has to be secondary processed (such as shot blasting, dry grinding or wet polishing) this is vitally important. Together with all the colour possibilities, Peranco has all the options open for the future.

Due to the nice mild climate on Cyprus the Rotho curing racks are built as an open system with a natural curing system with no forced curing or even air circulation plus a fully automatic finger car system in loading and unloading the curing racks. After a 24 hours curing cycle the concrete products are packed. On the dry side the full electric TW Cuber is placed. This cuber has also full electric grabs that, similar to hydraulic grabs, keep a momentum on the layer when it is lifted and moved until the grab lets it go. The standard lifting weight of 700 kg is in balance with the amount of concrete that can be compacted by the vibration table.

All the products are placed (and transported to their final destination) on a shipping pallet. A roller conveyor brings the pack to an automatic Messersi wrapping machine that packs the product. When that is finished the product packs are ready to go into the storage area.

The whole process of making the concrete product is controlled via the Hess visualization software; this includes a sophisticated fault diagnostic which helps the operator to find a fault when the production process stops. This is backed up by the HDPS (Hess Documentation Parts Service) which makes all parts, drawings (electrical, hydraulic and pneumatic) available on the screen of your computer in combination with very easy to handle search system, either by drawing or in written text. This is very easy for maintenance instructions but also you will find quickly information for ordering spare parts either with Hess or the original manufacturer of the part.



From left to right, Mr. Ferry Jakobs (Hess), Mr. Petros Prokopiou (Peranco) and Mr. Riccos Nicolaides (Peranco Ltd)

FURTHER INFORMATION



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A VPN connection with Hess Group after sales service is the next step in the backup service, for problems, which cannot be detected via the internet, very experienced service engineers can be contacted. Hess Group realize that a block machine is only interesting for the user when it actually makes concrete products!

At Peranco the project went very well and in January 2018 the first products were made, all according the scheme the project team has made when placing the orders. Within a time frame of 5 months Peranco actually turned an old production facility around into a modern production facility with a versatile Hess RH1500-3MVA as the beating heart of the production plant.



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