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New production plant for multifunctional paving stones in Hungary

In terms of the quantity of placed concrete SW Umwelttechnik Magyarország Kft. is the biggest manufacturer in Hungary. In 2015 the company began to develop a revolutionary new group of products, i.e. paving stones that can be equipped with electronic devices or other information technology components. To be able to produce the new products SW Umwelttechnik Magyarország Kft. invested in a complete new concrete factory with a 3,200 m² large production hall for the manufacture of concrete blocks as well as in the creation of a world-class, mostly automatized technological line for the production of concrete blocks with customized automatic feeding and mixing equipment with high-performance mixer, silo system and gravel loading system - all from MCT Italy S.r.l.

The SW Umwelttechnik Magyarország Kft. is a subsidiary of SW Umwelttechnik Stoiser & Wolschner AG with its headquarters in Klagenfurt, Austria. The company was founded as a family business in 1910. Nowadays, it has nine premises in Hungary, Austria and Romania. According to SW Umwelttechnik Magyarország Kft. the company is the biggest manufacturer of concrete units in Hungary based on the quantity of placed concrete. The company's legal predecessors have been manufacturing concrete, reinforced concrete and pre-stressed concrete units for more than 50 years. The production plants operate in Alsózsolca, Bodrogkisfalud and Majosháza, where also the regional headquarters of the

company are located. The company provides its customers with high-quality and innovative concrete products in five branches of the construction industry: construction works, residential building construction, traffic engineering, water draining and building electrical networks.

Paver with integrated electrical tools, devices and parts

In accordance with the concept of the call to tender "Support for the R+D+I activities of companies" SW Umwelttechnik Magyarország Kft. in 2015 began to develop an innovative new group of products, i.e. paving stones that can be equipped with electronic devices or other information technology components with the purpose to develop a technology that has considerable added value in Hungary, in the EU countries and also on other international markets, that is currently not in production, and that fulfils the requirements of usability and environmental sustainability. This group of products will be sold at Alsózsolca.

It is the ambition of sophisticated architecture that a certain space is not only used every day but that it also provides an aesthetic spatial experience. In order to produce additional functional and aesthetic effects different installation units need to be built and integrated. The newly designed products of SW Umwelttechnik Magyarország Kft. have various



General view of batching plant after completion



General view of batching plant under construction

designed internal installation cavities, which the building contractors will provide with functional components based on the plans of designers, architects, garden and spatial designers. The product created within the context of a market-oriented research development project allows for the easy integration of new technologies, which have no relation to the concrete industry for a wide range of applications, this involves gaining and improving the knowledge necessary for the production and developing technologies and prototypes. The paving stone can be manufactured with an optional aesthetic appearance, all kinds of tools, devices, electrical parts can be integrated into it in series, and its production is fully automatized. These products make it possible to conquer new European markets.

The results of the research and examinations conducted as part of the project can be used in practice as well, they contain a large number of innovations. As an inseparable part of this development a domestic patent with the title "Permanent shell core for the creation of an internal cavity in vibrated-pressed concrete bodies", and in several EU countries a utility model protection has been registered.

Large production hall with customized feeding and mixing equipment

The instruments of the industrial investment with a value of more than 3 billion Hungarian Forint or HUF (aequivalent to 8.5 million Euros or 9.8 million US-Dollars) have been procured in the framework of a public procurement of the European Union, but the production hall that provides place for the almost fully automatized technology has been built in the framework of a national public procurement procedure. The investment was partly financed according to the GINOP211 tendering scheme. SW Umwelttechnik Magyarország Kft. has concluded seven public procurement contracts in total to realize the investment. The comprehensive investment of the company involves - among other things - the building of a complete concrete factory with a 3,200 m² large production hall for concrete blocks as well as feeding and mixing technology, the creation of a high-class mostly automatized technological line for the production of concrete blocks with the procurement of customized automatic feeding and mixing equipment: a high-performance mixer for core concrete and wearing course, a silo system and a gravel loading system all from MCT Italy S.r.l. Other parts of the project are related technologies for blocks production, a curing chamber, as well as packaging machines suitable for the strapping and foiling of concrete products, and also the creation of a passage for trucks. The production has completely been integrated into the SAP business management system.

In such investment, the concrete production facility is of paramount importance for the factory performances and ultimately for the project success. The long experience together with the design flexibility of MCT Italy played a decisive role in the project development to ensure the right solution and the proper integration of all the components within the project specifications.



Aggregate dispensing platform on the top of the storage

From the early stages to the factory commissioning, the expertise of MCT engineers provided the whole project the value required for its timely achievement. Particular importance on the project design and development have the aggregates loading system, the aggregates storage and dosing, and the mixing structure and platforms.

The batching facility is fully integrated in the factory design and layout, with its structures in a combination of concrete and steel and a common cladding enclosure, seamless with the rest of the factory.

The aggregates section is mainly made out of concrete, with supporting structures and aggregates compartments duly designed for the integration of the steel components for the automated loading and dosing of the aggregates. The synergy of the engineering departments at SW and MCT is evident from the successful integration of these systems.

The mixing tower has been designed to be fully integrated with the factory building, as well as for the safest and most comfortable use and maintenance of the machinery dedicated to the concrete production and transportation to the other manufacturing sections of the factory, with large platforms and proper fire rating required by the project specifications.

Concrete quality performances are ensured by the dosing of chemical admixtures and pigments, all engineered in the MCT systems, together with binders storage and conveying.

New markets ahead

"We at MCT are very proud of being part of this project with SW, where the challenges of management and engineering become innovation tasks and we always feel like working in a really experienced team, whose efficiency was ensured by the coordination of our Hungarian colleagues headed by Eng.



View of the mixers platform

István Fejes from FACT-Plus Kereskedelmi és Szolgáltató Kft.," states MCT Area Manager Eng. Alessandro DiCesare. "Also, it's a great source of satisfaction and growth to participate in such European development projects, which we are always keen to support".

"We were honoured to be able and put our professional experience and long-standing relationships at the service of such an innovative project," adds István Fejes from Fact-Plus. On 26 September 2019 the factory was officially put into operation. With more than 130 guests the handover celebration of the plant was held in the presence of the Minister of the Prime Minister's Office Gergely Gulyás, of Member of the National Assembly Katalin Csöbör and of the Austrian Ambassador to Hungary Elisabeth Ellison-Kramer.



Grand opening of the factory, from the left: János Váczi (Board member of SW), Katalin Csöbör (Member of the Hungarian Parliament), Gergely Gulyás (Hungarian Chancellery Minister), Elisabeth Ellison-Kramer (Austrian Ambassador to Hungary), Klaus Einfalt (Board member of SW), Ferenc Galló (Managing Director SW Hungary)

"The plant extension in Alsószolca is a pioneering step for our company, which secures the location for decades. With the additional state-of-the-art production, this will allow us to further strengthen our market position in Hungary and shorten our transport routes, we have created 25 new jobs in the region," explains Klaus Einfalt, Member of the Board of SW Umwelttechnik.

It took four years in total from writing the tender through the planning and public procurement to the construction works. The manufacturing of the new product group opens up new markets for the Austrian-owned company. The development may bring an annual turnover of 2 billion HUF (aequivalent to 5.6 million Euros or 6.5 million US-Dollars), and the creation of new jobs contributes significantly to the economic recovery of the underdeveloped Eastern region of Hungary. ■

FURTHER INFORMATION



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