

Central Asian house construction development: Italian technology for Uzbekistan

The Republic of Uzbekistan has been gaining a reputation as one of the most dynamically developing countries in Central Asia. According to the World Bank's "Doing Business report" Uzbekistan was one of the top ten countries that achieved the best improvement in the state of its business environment. The well-respected international financial journal "The Economist" named Uzbekistan as the "Country of 2019", adding that this country "still has a long way to go, but no other country has come that far this year."

The last few years has seen Uzbekistan announce large-scale multifunctional development projects and construction of

these are already underway. These projects are taking place throughout the country in cities such as Nurafshon and Bukhara. However, the most dynamic developments are, of course, in the capital Tashkent.

One of the most pressing problems facing the city today is housing construction. The solution to this complex problem requires not only the construction of residential houses but also schools, gardens, administrative, social and cultural facilities. All this requires modern technology and construction materials, which need to meet all the building regulation standards within the country.



Extruder with semi-gantry overhead crane

Earthquake-resistant precast systems for multi-storey buildings

To provide the market with such materials, Euro Global Invest, one of the manufacturers of building materials for housing and industrial purposes, decided to create a new business arm within its company. The main task of this new division was to set up a plant to meet the needs of the construction industry in Uzbekistan during the period of its active development, providing high quality products, with increased thermal, fire and seismic properties.

Euro Global Invest, in collaboration with foreign and local design institutes, universities and research centers developed a design for earthquake-resistant multistorey residential houses based on precast technology. A new prestressed concrete hollow core slab production line was required and to meet this challenge a new plant was commissioned from the Italian company Nordimpianti.

Nordimpianti's involvement in the project was summarized by Euro Global Invest's plant development director, Anvar Kamaliddinov: "We carried out an extensive analysis of all the equipment suppliers in the market. A decision such as this is never based on one reason alone, it is a balance taking many different factors into account however, if I had to point out just one I would say that Nordimpianti's build quality is very impressive".



Multi-angle Saw cutting concrete elements up to 420 mm high

He also spoke of Nordimpianti's history in the industry. This includes the following:

nordimpianti



EXTRUDER



SLIPFORMER



WET CASTING



EXTRUDER NANO

The best casting machines available for the production of high quality prestressed concrete elements



NORDIMPIANTI's casting machines can produce a wide range of prestressed concrete products such as hollow core slabs for flooring and walls, inverted T and I-beams, vineyard posts and lintels, prestressed slabs, U slabs, inverted double T slabs etc.

Prestressed products made by NORDIMPIANTI's Extruder, Slipformer, Wet Casting, and Extruder Nano machines offer many advantages that make them a success all over the world.

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Anti-seismic key on the side surface of a hollow core slab

- Nordimpianti has 45 years of experience in the design and manufacture of equipment for the production of prestressed concrete products;
- Nordimpianti is one of the leading suppliers of machinery for the construction industry in the international market;
- Nordimpianti's machines (slipformers, extruders and wet casting machines) allow the production of a wide range of products, such as hollow core slabs (up to 1 m high), T-beams, lintels, ribbed slabs, U-slabs, wall panels etc.;
- Nordimpianti delivers their lines and machines all over the world: Europe, Middle and Far East, India, Latin America, etc. In the CIS countries, the company is currently represented in Russia, Kazakhstan, Uzbekistan, Georgia and Ukraine.

The production line installed at the Euro Global Invest plant is highly automated requiring the minimum amount of labour. Planned capacity per shift at the plant is up to 550 sq. m. of hollow core slabs and only five workers are needed. It is equipped with four production beds, each 140 m long, with a single pre-stressing system on each bed. The plant includes an automatic concrete distribution system with a semi-gantry overhead crane along with an extruder machine to achieve the casting phase. The extruder itself is fitted with side indenting device to make a waved profile key on the side of the elements for seismic resistance.

Euro Global Invest also purchased some ancillary equipment such as a multi-angle saw for element cutting up to 420 mm high and at any angle from 0 to 180 degrees, a bed cleaner for cleaning, oiling and steel wire laying, lifting beams to remove concrete elements from the production site and a transport system to stock the elements in the factory warehouse.



Residential area built by Euro Global Invest

In the near future, Euro Global Invest aims to reach a production capacity of 140,000 square meters of housing per year. It also aims to expand the range of manufactured products. This will be possible because the existing equipment supplied from Nordimpianti is very flexible and can be used to produce a wide range of products. This means that Euro Global Invest will cover not only the civil, but also the industrial sector of the construction industry (slabs with large spans, concrete elements for bridge structures, beams, etc.).

This innovation has already started in Tashkent. Euro Global Invest is the head of the project for residential complex "NUR" built completely with precast concrete elements by its own team of professionals using its own products. ■

FURTHER INFORMATION

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