

Nordimpianti System Srl, Chieti (CH), Italy

# International Precast Solution (IPS) is modernising its River Rouge hollow-core slab plant with new automated machines

The history of IPS, a Canadian-owned company based in River Rouge, Michigan, United States, dates back to the 1950s, when brothers Mario and Rigo Collavino emigrated to Windsor, Canada, from a small village in the province of Udine, Italy. There, they founded a construction firm, Collavino Brothers Constructions. Starting out as a small-scale operation, the company grew rapidly to become a builder of residential and luxury properties, including Windsor's first skyscraper, the Solidarity Towers.

In 1975, Collavino Brothers Constructions expanded operations by diversifying its portfolio with the opening of a pre-

cast plant, again in Windsor, named Prestressed System Inc. (PSI), which specialised in the manufacture and installation of hollow-core slabs. The company subsequently expanded its presence with a branch in the United States, Hollowcore Inc. A key milestone came in June 2008, with the establishment of International Precast Solutions (IPS) following the acquisition of a precast plant on the outskirts of Detroit, Michigan, United States. Together with the Canadian company PSI, IPS formed a group, which is now able to offer a wide range of precast and prestressed products for the construction industry and is active throughout North America with numerous major projects.



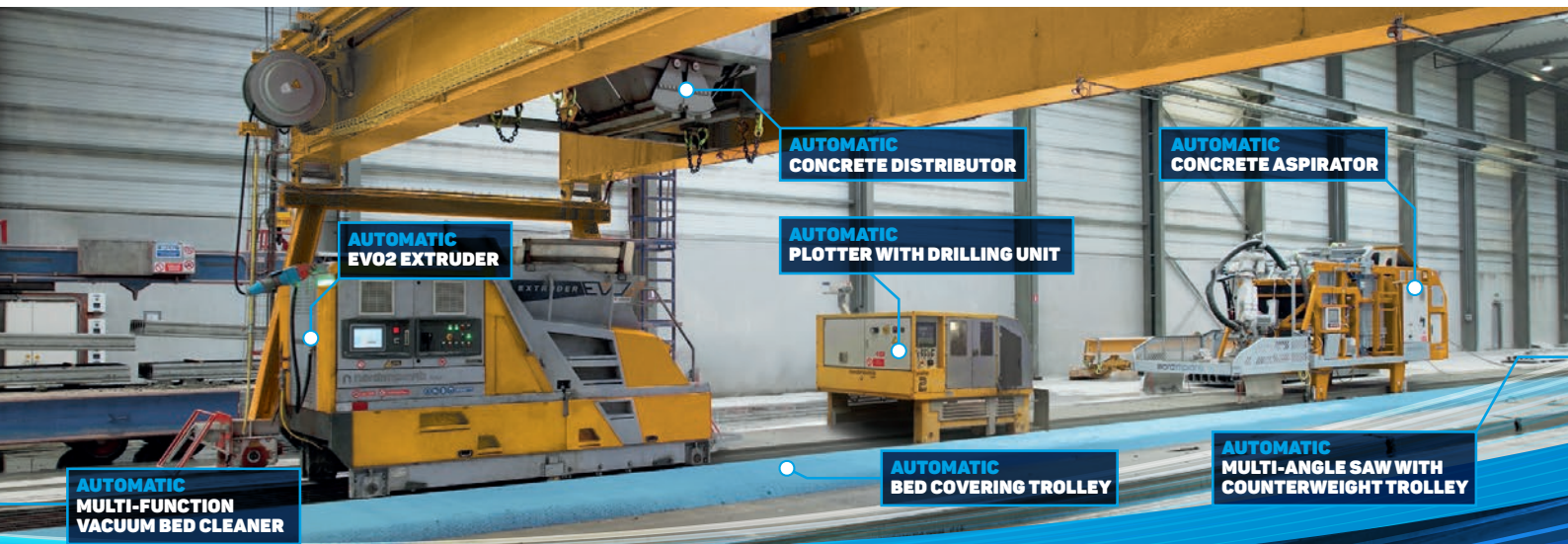
*Interior view of the IPS production plant in River Rouge, United States*



IPS's first visit to Nordimpianti. From the left: Mr. Alex Baker (V.P of IPS), Mr. Roy Spadafora (Plant Manager of IPS), Mr. Gian Piero Gagliardi (CEO of Nordimpianti), Mr. Nunzio Gagliardi (President of Nordimpianti), Mr. Renzo Collavino (V.P of IPS), Mr. Marco Olmi (Nordimpianti's Sales Area Manager for North America)

At the same time, Collavino Construction has continued to grow, expanding its operations internationally to Africa and the Middle East. Among its most significant projects is the One World Trade Center, also known as the Freedom Tower, situated at Ground Zero in New York, United States, which, at 541 metres, is the tallest tower in the country.

The IPS plant for hollow-core slabs at River Rouge comprises of three production lines, each 440 feet (approximately 134 m) long, on which prestressed slabs with thicknesses ranging from 8" to 14" (200-350 mm) are manufactured.



## PUSHING THE ENVELOPE OF AUTOMATION AND EFFICIENCY IN THE PRODUCTION OF PRESTRESSED HOLLOW CORE SLABS

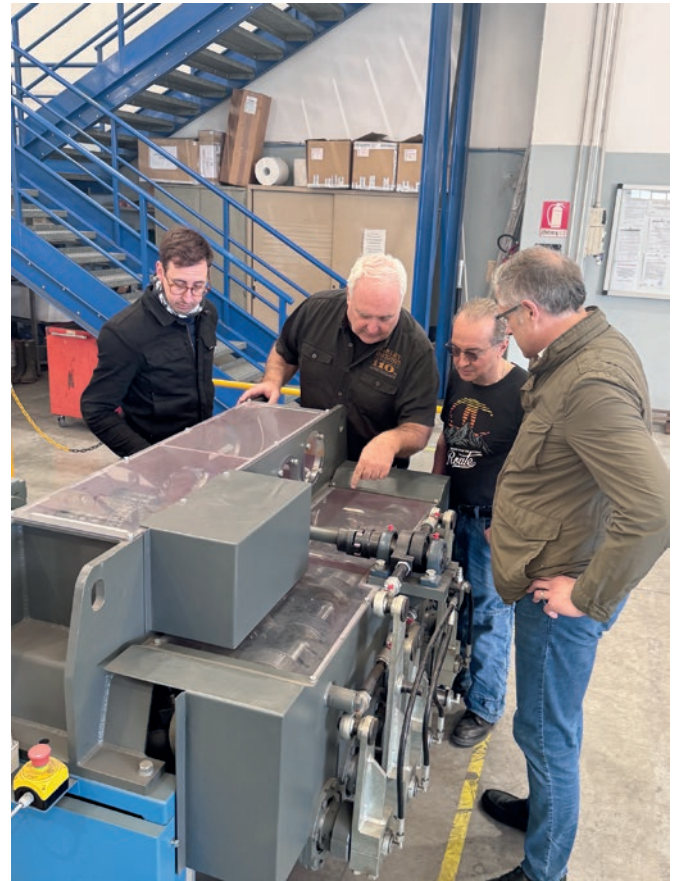
NORDIMPIANTI is a world leading manufacture of machines and equipment for the production of prestressed hollow core slabs primarily used in the construction industry.

NORDIMPIANTI's automatic machines are meticulously engineered to ensure the highest levels of production efficiency so that labour and

production costs are driven as low as possible.

NORDIMPIANTI has over 50 years of experience in the prestressed concrete industry supplying companies in over 60 countries.

From a single machine to a complete turnkey project NORDIMPIANTI has you covered!



*Renzo Collavino explaining the benefits of Nordimpianti's machines to his colleagues*

The production site has over 45,000 m<sup>2</sup> (500.000 sq. ft.) of covered area and 120,000 m<sup>2</sup> (over 30 acres) of open-air space and within this the entire range of precast products is manufactured, including architectural wall panels, beams, columns, tunnel and bridge sections as well as other structural elements.

With the aim of modernising and optimising the production of hollow-core slabs, the team management of IPS, co-led by Renzo Collavino, son of Mario, one of the founders, entered into a partnership with Nordimpianti System Srl, a company based in Chieti, Italy, which has been a world leader for over 50 years in the design and manufacture of machinery and systems for the production of prestressed concrete hollow-core slabs.

Following the initial round of discussions, a delegation from IPS visited Nordimpianti's headquarters and factory in Chieti. A visit was also arranged to a modern plant belonging to a prestigious Belgian client of Nordimpianti. This plant is equipped with a complete set of machines from Nordimpianti that feature very high levels of automation. These visits enabled IPS executives to appreciate at first-hand the high quality and technological sophistication of the capabilities that Nordimpianti could offer, leading to the decision to implement more efficient solutions for their River Rouge plant. The order included several machines, including an automatic

multi-purpose bed cleaning machine, a state-of-the-art plotter and a telescopic balance lift for lifting and transporting elements.

The automatic multi-purpose cleaning machine enables the cleaning and preparation of steel casting beds to be carried out simply, quickly and efficiently. The system uses a front-mounted rotating brush and a debris collection bin, which can be easily emptied at the end of the production bed using the on-board hydraulics. The machine is also equipped with nozzles for the uniform and controlled spraying of detaching oil, which not only helps maintain the quality of the underside of the slabs but also aids the removal of the elements from the production bed.

Furthermore, the machine itself is equipped with a support assembly for securing and transporting prestressing steel cables along the track, from one end to the other, in a single pass, thereby optimising operations. It is powered by a high-capacity rechargeable battery, which guarantees a minimum operating time of a full working day. Charging is carried out via a dedicated battery charger connected to the workshop's mains supply, whilst the removable and easily replaceable battery ensures greater flexibility and ease of use compared to traditional systems using electric cables and cable reels, which are often prone to wear and damage.



*Automatic multi-function bed cleaner from Nordimpianti*

A key feature of the new multi-purpose bed cleaning machine is the inclusion of a laser positioning system as well as collision sensors and control devices that enable the machine to operate in automatic mode without an operator on board. The laser detects the machine's exact position, whilst collision sensors ensure that the machine stops immediately if obstacles or personnel are detected along its path.

The plotter chosen by IPS is the most advanced model in the Nordimpianti range and is equipped with two print heads for marking both a side surface and the top surface of a floor slab. It also features both transversal and longitudinal movement within the machine, together with a unit for automatically drilling drainage holes to remove any water that may be present inside the voids. The plotter is used to mark the



*The Plotter from Nordimpianti*

alphanumeric identification codes for individual slabs and to provide information such as cutting lines, cutting layouts for various wet-cutting processes (open notches, cut-outs) as well as the positioning of any lifting hooks and other details.

The data to be printed is prepared in the office during production planning and uploaded via a Wi-Fi network or USB stick. Like the bed cleaner the plotter is also powered by a rechargeable battery and is equipped with a laser positioning device, a computerised control system for maximum precision, and collision sensors. The presence of a print head that moves longitudinally, in addition to the traditional transversal axis, allows marking to be carried out significantly faster than with a standard machine, with benefits in terms of productivity and reduced cycle times for the entire production line.

To complete the supply, IPS opted to incorporate a telescopic balance lift into its plant for lifting hollow-core slabs. The telescopic balance lift is connected to the factory's overhead crane and controlled directly from the crane's remote control. The control system allows the length of the balance lift and the distance between the clamps to be adjusted hydraulically, from a minimum of 2 metres to a maximum of 12 metres, easily adapting to the various sizes of slabs to be lifted.

The clamps are fitted with an electromechanical opening and locking system. Once positioned on the slab, they engage with the lifting groove of the element and secure it safely. This allows a single operator to carry out the entire sequence of clamping, lifting and loading onto the transport vehicle

quickly, efficiently and safely. This operation often represents a bottleneck in the operations of floor production plants when being carried out using traditional manual scissor-type lifting clamps.

All the machines ordered by IPS have been designed and manufactured by Nordimpianti in full compliance with the regulations in force in the United States of America, using only approved and certified components.



*Telescopic Balance Lift from Nordimpianti*

As the machines were being manufactured, Renzo Collavino paid a further visit to the Nordimpianti factory in Italy whilst on a holiday in the country. The visit, undertaken on powerful American motorbikes as part of a tour of Italy with friends, was an informal occasion that was particularly appreciated by the entire Nordimpianti team!

Nordimpianti's machines were completed and shipped at the end of 2025, whilst the commissioning and start-up, carried out by Nordimpianti's specialist technical staff, were successfully completed at the beginning of 2026.

IPS expressed great appreciation for the features and benefits of the new machines, for the professionalism of the Nordimpianti team throughout all stages of the project and, in particular, for the technical support service. Following a thorough testing phase after commissioning, the intention to continue this fruitful collaboration on future plant modernisation projects was also confirmed. ■

#### FURTHER INFORMATION

## nordimpianti

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