

RATEC Asia Summit Breaks Visitor Record Again

More than 70 participants attended the RATEC Asia Summit in November under the theme „Better Ideas in Precast & Modular Construction.“



From left to right: Raymond Chan, Kenneth Pan (Easpect Pte Ltd.), A/P Dr. Eugene Seah (DLS Consultancy Pte Ltd.), John Carlo M. Quiros, Sylvia Chai, Cesar Deguilmo Jr.



The traditional group photo – an integral part of every Summit!

The exclusive event provided insights into cutting-edge precast technologies from world-leading experts: modular construction methods and digital tools that enhance efficiency, improve quality, and reduce the environmental impact of construction projects. The event took place in November 2024 in Manila, right before the Philippines' most significant industry trade fair, Philconstruct Manila.

Our speakers, including Dr. Eugene Seah, CEO of DLS Consultancy Pte Ltd. from Singapore, Daisuke Tajiri, CEO of DataLabs INC from Japan, and Robert Neubauer, Managing Partner of RIB SAA Software Engineering GmbH from Austria, provided fascinating insights. The opening address was given by Ronaldo „Junn“ Elepaño Jr., President of the Philippine Constructors Association (PCA).

The central theme of the event: How can the industry collectively set higher standards for smarter, more sustainable, and more efficient construction?

Since 2018, RATEC Asia has organized the event, apart from interruptions due to the pandemic, and has seen steadily growing interest from visitors. To mark the 2024 anniversary and the event's fifth edition, a relaxed poolside gathering with drinks and live music followed the conference.



Renowned industry experts provide insights into new and proven solutions

SHORT NOTES:

KEY INFORMATION IN A NUTSHELL

50 Years of Reymann Technik
Since 1974, we have represented innovation and expertise in the precast concrete industry. Half a century of progress – and we are ready for the future!

30 Years RATEC
Since 1994, we have been developing innovative formwork solutions for the precast concrete industry. Three decades of innovation, partnerships, and growth – and better ideas!



Bay City Ballroom in Citadines Bay Hotel Manila

Visit website:



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www.ratec.org

RATEC

MEET THE BETTER IDEAS

Welcome to the world of better ideas!

Pioneering Spirit in Concrete: How We Are Advancing Formwork Technology
The production and development of intelligent formwork solutions is our passion. For over 30 years, this has made us the leading provider of magnetic formwork technology, 3D moulds, and customized solutions for precast concrete production. Our goal: to always be one step ahead – precisely what our slogan „Meet the better ideas!“ represents.

The current market situation presents significant challenges for many. While the housing sector is struggling, the infrastructure sector continues to offer promising opportunities. This is where smart, efficient formwork solutions are in high demand – and we deliver them. Particularly in the field of 3D mould solutions, we have experienced significant growth in recent years: We have now produced and successfully delivered over 40 moulds to our customers in this segment. A testament to the fact that quality and innovation thrive even in challenging times.

We believe that the key to success lies in collaboration. That's why we look forward to meeting industry professionals, engaging in exciting discussions, and tackling the topics of the future together!

Digitalization and Sustainability – Future-Oriented Solutions for the Precast Concrete Industry
Increasing demands for efficiency, resource optimisation, and sustainability are shaping the market. As an innovation driver, RATEC develops intelligent formwork solutions that fit into digital processes and sustainable construction.

By utilizing modern CAD and BIM technologies, building concepts can now be planned more precisely and implemented more efficiently. Digital solutions optimize manufacturing, reduce material consumption, and minimize waste. However, the impact extends beyond the production process: intelligent formwork systems enhance efficiency in precast plants, shorten production times, and conserve resources – saving costs while improving the entire value chain.

Our 3D mould solutions, for example, allow for more precise prefabrication of modular building components, which can be assembled more quickly on-site. This reduces construction times, minimizes traffic and site disruptions, and promotes a more sustainable construction method that enhances both the economic and environmental performance of projects in the long run.

Major Project for Transformer Station Production in Europe Completed

New transformer station plant commissioned



View of the factory with a vertical roof mould and two modular moulds



Finished roof element



Finished station element

In 2024, we delivered four 3D moulds, a basement mould, and four roof forms for the production of transformer stations to a customer in Europe – all moulds adjustable and highly efficient in handling.

For RATEC, this was one of the largest projects in this segment and a significant milestone since our entry into the transformer station segment in 2018. The well-thought-out design of the inner core is particularly

impressive, as it allows for a wide range of production variations. The flexibility of the moulds is also evident in the adjustable length of the inner core: while the basement mould can be adjusted in 10 cm increments, the module and roof formwork systems allow for adjustments in 20 cm increments.

Two of the module moulds, as well as the basement mould, each cover 26 length variations, while the base-

ment mould additionally supports two widths. For the internal walls, eight possible variations were required – six in fixed positions and two freely placeable along the length in 10 cm increments. This results in over 1,000 different possible configurations of concrete elements within a single mould.

Our solutions are distinguished by their high efficiency, space-saving design, and economic and sustaina-

ble properties. Our mould solutions stand for the highest dimensional accuracy and quality standards, meeting the demanding requirements of our customers. Thanks to our extensive experience and expertise in formwork technology, we develop innovative solutions that combine efficiency and flexibility in production.

Further developments in the field of 3D moulds

RATEC has been producing moulds for transformer compact stations since 2018 – a growing market due to the energy transformation and e-mobility. At the same time, the demand for intelligent 3D moulds is also increasing in residential construction.



Mould with sandwich panels on the outer formwork

1. Adjustable moulds for transformer stations

Our adjustable moulds for transformer stations enable flexible and efficient production of transformer compact stations. As part of the programme expansion, we have integrated additional insulation for the outer formwork to ensure improved insulation and energy efficiency. We have also developed roof moulds specifically for space-saving, vertical production, which facilitates even more efficient use of production space.

2. Adjustable 3D moulds with shrinking core

RATEC is expanding its product range in the area of 3D moulds with the development of an innovative elevator shaft mould. This adjustable 3D mould with shrink core is specially designed for the production of four-sided concrete elements.

A key feature is the adjustable shrink core, which can be flexibly adapted in length and width. The external formwork consists of four vertical panels, which are arranged in a windmill configuration and thus



Length-adjustable mould for cable basements – flexibly adjustable in 20 cm increments

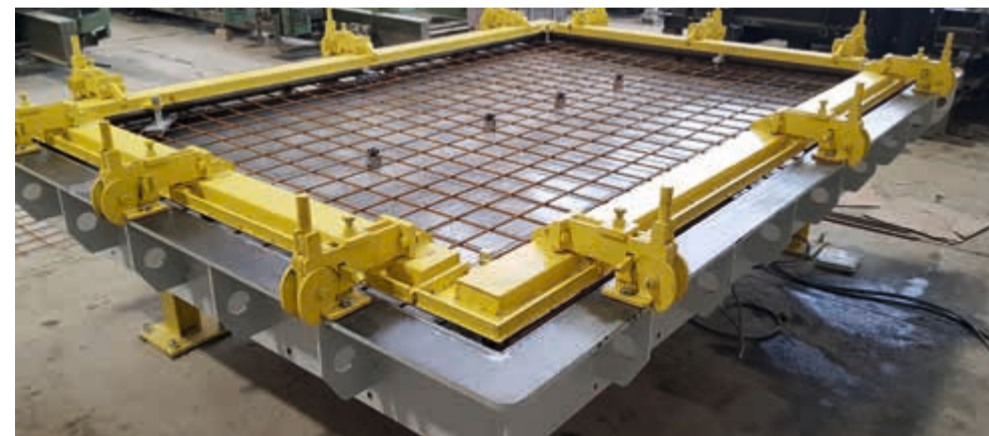
enable optimum shaping. The external formwork also offers a high degree of variability. For example, it covers lengths of one to three metres without the need for additional formwork elements when converting.

There is also growing demand for this technology on the Asian market, particularly for the production of so-called 'house-hold shelters'. These shelters consist of four-sided concrete elements and are used, for example, in residential construction in Singapore in accordance with

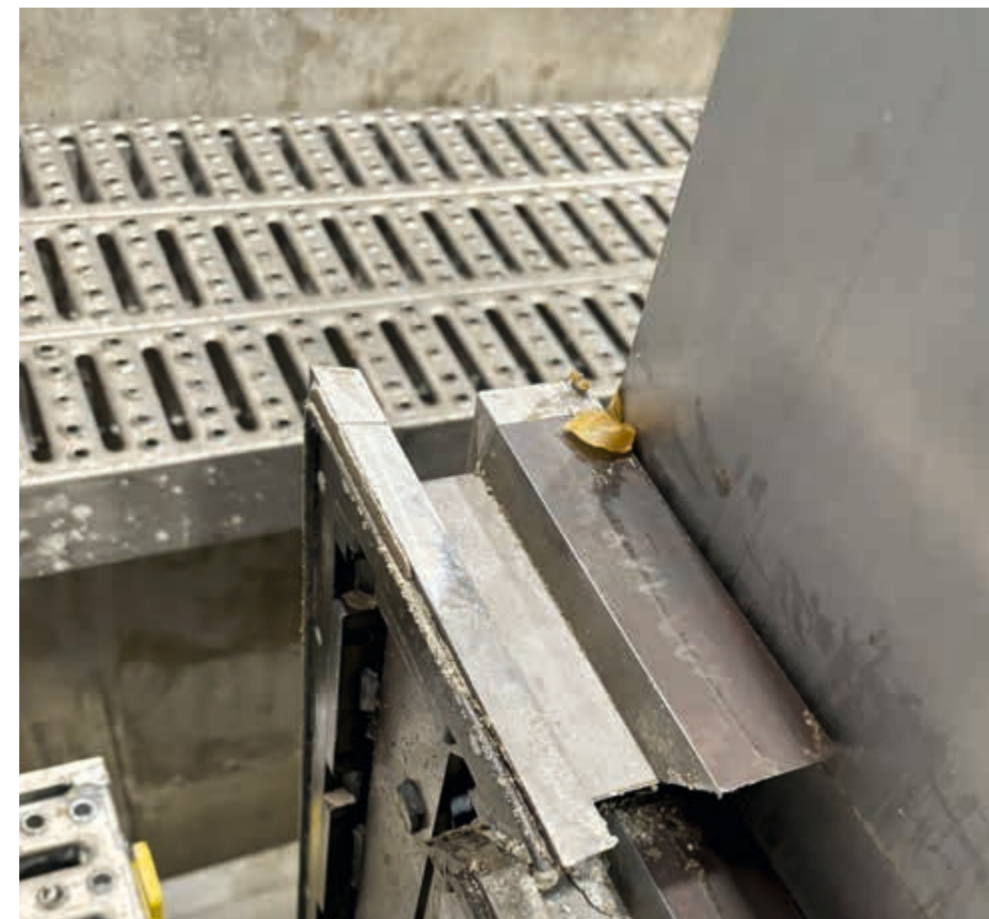
HDB building standards. With an enhanced wall thickness of up to 300 millimetres, these rooms serve as safe refuges in the event of natural disasters such as earthquakes and tsunamis as well as in emergencies such as fires or terrorist attacks.



Visit website:



Roof mould for horizontal production



Shrinkable door recess for easier demoulding

Battery system for upcrete® – DZ Precast Solutions

DZ Precast Solutions is the project developer of North America's largest seniors' residential complex "The Villages" and since 2019 an invaluable partner of the RATEC and Reymann Group.



With 2 x 10 pockets, this is the largest battery mould that RATEC has ever installed



upcrete® technology – concreting from below

Reymann Technik planned and realised the precast concrete plant, which went into operation at the beginning of 2021 and is still considered the most modern automated pallet circulation system in North America.

Since then, the plant has been continuously expanded and kept up to

date: This includes the further development of the building system and incorporation of a fencing system based on H-columns and wall elements, for which RATEC developed and supplied a battery mould with 2x10 pockets in 2024. High surface quality and customised designs were essential here!

The mould is designed to be filled from below using upcrete® technology by a concrete pump and enables the production of walls with a textured surface using formliners.

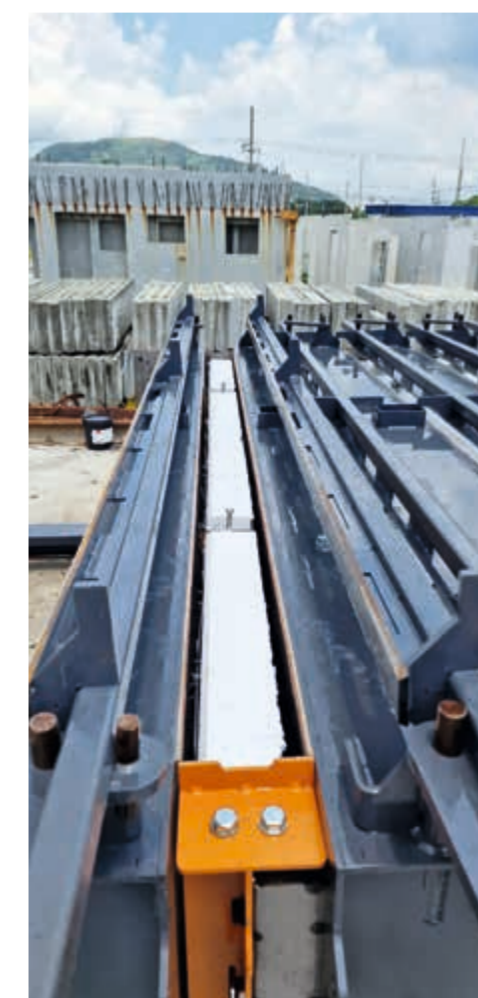
The pumping equipment consists of a UPP100 pump station and a rotary spreading device for the pump hose with a radius of twelve metres. With

a total of 20 pockets, it is the largest battery mould that RATEC has ever installed.

The elements produced are six metres long, 1.20 to 2.43 metres high and have a wall thickness of 150 millimetres. The pockets are tensioned for concreting with 60 tonnes per side.

Battery system for sandwich elements installed in the Philippines

A new battery mould with 10 pockets for the production of sandwich elements was installed at our customer in the Philippines in 2023



The insulation of the sandwich walls is filled on both sides with 3 centimetres of lightweight concrete

In 2023, our customer in the Philippines received a new battery mould with ten pockets for the efficient production of sandwich elements, which are used to produce 2.70 metre long and 60 centimetre high interior walls for use in skeleton construction.

The sandwich elements have integrated insulation and are covered on both sides with a three-centimetre-thick layer of lightweight concrete. This construction makes the elements so light that they can be moved directly on the construction site by two people without additional aids.

For assembly on site, the walls are either provided with tongue and groove or – in the case of the edge elements – with a groove and a smooth finish.

This profiling is created in the mould by the base formwork, which can be rotated by 180° as required, and by the cover, which closes the battery pocket from above after concreting.



Battery system with ten pockets for walls approx. 2.7 metres long and 60 centimetres high

Concrete filling is carried out conventionally from the top.

This battery system was designed for very small and lightweight elements –

but our systems can also handle lengths of up to 9 metres and reach heights of 4 metres!

Magnetic formwork technology: **New ideas for existing challenges**

Requirements for formwork technology in precast concrete production are not new – but they are constantly growing

High quality components and dimensional accuracy, flexible production processes, sustainability, ease of operation and automation in response to the shortage of skilled labour are decisive factors. However, ideal formwork solutions must combine all these aspects and at the same time guarantee maximum efficiency.

This is exactly where RATEC steps in: Despite an already broad product portfolio, we are continuously working on making our solutions even simpler, more efficient and more sustainable – for a future-proof precast concrete production.

2. Staircase Magnet

The staircase magnet enables reliable fixation of the formwork skin in stair moulds and ensures maximum stability during concreting. It is available in various heights, including 150 millimetres and 180 millimetres, and can be flexibly adapted to different requirements.

It is easy to install using screws, which are securely fastened using the hole pattern on the front. This ingenious solution ensures fast and precise positioning, making the production process more efficient and accurate.



The staircase magnet can be used for many moulds of common manufacturers

4. SAS with different front heights

The specially developed shutters allow the efficient production of precast concrete parts for use in heat pump systems. Based on the proven SAS standard automatic shuttering system, they can be concreted on both sides and are equipped with front panels of different heights. This means that two different wall thicknesses can be produced with just one formwork system.

For maximum precision, rubber lips prevent concrete leaking under the shuttering by surface irregularities on the table. Thanks to ergonomically positioned handles at the front and top, the shutters are ideal for both manual handling and crane operation.



Shutters with different heights for double-sided use



Rubber lips and cover plate protect against soiling

1. „Isokorb“ Adapter

A so-called Isokorb serves as an effective thermal break element that minimises thermal bridges between a balcony and the building. In this way, it not only contributes to energy efficiency, but also protects the building structure in the long term.

Specially developed magnetic adapters allow the Isokorb to be securely fixed in the mould – without the need for complex screw connections or additional brackets. This solution enables fast, flexible and reusable positioning, optimises work processes and improves the quality of the precast concrete elements at the same time.



Adapter solution for thermal insulation elements for balcony connections

3. Solutions for high wall thicknesses

RATEC has developed a special supporting formwork for the production of particularly high elements up to 120 centimetres. One of the customers is using this for the production of 840 millimetre thick, complex sandwich walls.

The formwork impresses with its easy handling, high stability and crane-transportable design. It is securely fixed using the SPB2100 magnet box and can be quickly assembled thanks to keyhole technology. With its two-part design, it can also be used for lower wall thicknesses. This ensures flexibility in use and cost efficiency.



Support formwork for wall thicknesses up to 120 cm

5. Magnetic Shuttering for Battery Production

The many years of expertise in magnetic formwork technology also flows into vertical production – for example with the specially developed shutter for battery moulds based on the proven SAS Standard Automatic Shuttering System.

This solution is available in two versions: as a permanently bolted edge shuttering and as a laterally movable internal shuttering for producing several elements in one pocket. Thanks to keyhole technology, both can be flexibly adapted for different element thicknesses. The inner shuttering moves effortlessly along the L-profiles welded to the battery panel and is held securely in place by high-performance magnets.



Laterally movable inner shuttering for battery moulds

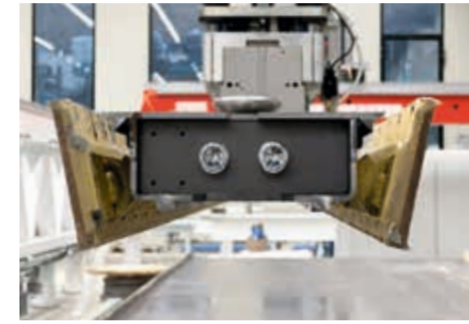
All shuttering units are equipped with crane mounts and their special design enables easy demoulding. The firmly bolted edge formwork can be moved sideways and upwards for this purpose. Another highlight is a system that increases the adhesive forces of the shuttering and thus ensures maximum stability.

This innovative solution is also compatible with standard battery systems from other manufacturers.

6. Automation solutions

For robot-supported processes in automated circulation systems, we have developed a range of shuttering solutions that address previously unsolvable problems and finally provide a practical solution.

One of these is a formwork support that can be concreted on both sides with chamfers on the top and bottom of the formwork facing, which shrinks



Shrinking formwork for double-sided concreting and robot operation

automatically for stripping and can be handled by a shuttering robot. On the other hand, we have developed shuttering solutions that can be vertically extended by robot or have different fronts set by robot – all fully automated and without manual intervention. As robot technology for precast concrete plants continues to develop, we are also continuously adapting our moulds to meet the increasing demands of automation.



7. Shrinking window recess

The shrink window has established itself as a proven solution for recesses in standardised sizes. Its robust steel frame consists of two halves and two separate corners, which are first removed for demoulding. The two halves can then be mechanically pushed into each other, allowing the frame to be reduced in size and easily removed.

This system enables break-free demoulding, significantly speeds up the shuttering and demoulding process and ensures efficient production. To offer even more flexibility, the solution has been extended to include variable side pieces. These allow the frame dimensions to be easily adapted to different dimensions.



Side pieces for adjusting the size of the window frame



Shrinkable door recess

8. MST with steel front

The Universal Plywood Beam (MST) is the preferred solution for use with plywood. Less common, but just as effective, is its use with a steel front – an option that was provided for from the outset by a specially developed extension set. The extension for steel fronts is now possible from a height of 100 millimetres.

Even in this version, the MST impresses with its proven advantages: easy handling, low weight, usability on both sides and stackability. Although the steel front adds a little more weight, but it scores points with a longer service life and greater precision for chamfers and profiling. The MST therefore offers a flexible and durable solution for different shuttering requirements.



MST with steel front



The steel front ensures clean chamfers

First climate-positive precast concrete plant **opened in Soltau**

In April 2024, a ground-breaking innovation caused a sensation: The company B-ton opened the first factory for climate-positive concrete in Soltau, Lower Saxony – with formwork solutions from RATEC.



A look inside the concrete factory | @Maximilian Seib / NDR

Concrete accounts for nearly eight percent of global CO₂ emissions, mainly caused by emissions and energy consumption in cement and clinker production. In view of the growing demand for sustainable building materials, it is crucial to take new paths in concrete production.

A completely new approach is being pursued in Soltau: A special mixing process makes it possible to reduce CO₂ emissions by up to 80 per cent. The targeted addition of carbon-reducing materials produces climate-positive concrete – an innovative material that binds more CO₂ than is released during its production.

This represents significant progress towards a more environmentally friendly construction industry. As a formwork supplier, RATEC supported the start of production with the Universal Plywood Beam MST and fixed side formwork.



MST Modular Plywood Beam is a flexible solution for solid elements

Rationalisation of precast element production in Barbados

Preconco and Caribbean Homes in Barbados have been valued customers for many years.

Since 2002, our American sister company Ratec America has been supplying Preconco with magnets and formwork systems for their prestressed slab plant. A significant milestone followed in 2007, when Reymann Technik planned an innovative vertical carousel system for Preconco – the first of its kind in the western hemisphere. Three years later, in 2010, another carousel system was realised for Caribbean Homes.

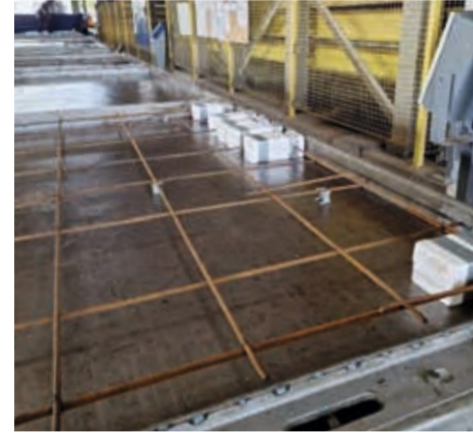
Homes was expanded with customised components – including fastening systems for built-in parts. To ensure smooth implementation and practical training, our technical manager travelled to Barbados in April to support the team on site.



Aerial view of the Preconco Ltd. plant.



New lasers facilitate the shuttering of the elements



Update and expansion of the magnetic formwork



Vertical circulation at Preconco

We continued our successful collaboration in 2024. Reymann Technik supported both plants in the course of a comprehensive rationalisation: integration of new master computers and modern laser projection as well as an update of the formwork technology. While Preconco received a completely new formwork system, the existing system for Caribbean

RATEC delivers formwork to one of Brazil's most modern precast concrete plants

In February 2024, a new innovative plant for the company Ecoparque went into operation



View of Ecoparque plant (Image: Alessandro Vieira/CC)



Robot-compatible SAS Standard automatic mould for solid elements (Image: Jonathan Campos / AEN)

For the first time a fully automated precast plant has been realised in Brazil, raising the efficiency and quality of precast concrete production to a new level – a true milestone for the Brazilian precast concrete industry.

setting new standards in precast concrete production. The plant was planned and equipped with the support of a consortium of leading European suppliers. In addition to state-of-the-art machine technology, Ecoparque also benefits from a comprehensive transfer of know-how in the areas of quality management, logistics and process optimisation. This combined expertise ensures that the new technology can realise its full potential and meet the high requirements for efficient, sustainable production.

As the selected formwork supplier, we were able to make an important contribution to this pioneering project with our innovative, robot-compatible formwork systems. Our SAS Standard automatic shuttering for solid elements and the tried-and-tested RT U60 Pro system for girder slabs and double walls were used – both solutions that are ideal for use in automated production processes with shuttering robots.

However, the Ecoparque Bairro Integrado project goes far beyond production – it sets new standards for sustainable construction in Brazil. A future-oriented housing estate is being built on over one million

square metres, comprising over 50 percent green areas and providing space for 4,200 flats in buildings of up to 15 storeys. Thanks to state-of-the-art prefabrication, factory is able to produce up to 2,400 residential units in just six months – an impressive construction speed that emphasises the efficiency and innovative spirit of this project.

We are proud to be part of this visionary project and to contribute to the creation of one of Brazil's most modern precast concrete factories with our formwork solutions. The successful implementation of Ecoparque shows the potential of industrial prefabrication and how it can revolutionise the construction process in the long term. Projects like this not only modernise the

Brazilian construction industry, but also represent a significant step towards more efficient and resource-conserving construction.



RT U60 Pro for girder slabs and double walls

MTK Magnet-Fabrik Solingen – Innovation and quality for over 40 years

MTK Magnet-Fabrik Solingen, a subsidiary of the RATEC Group, is an internationally active company specialising in the development and production of permanent magnet systems.



Small but excellent: a dedicated team in sales, product development and production at the Solingen site ensures customer satisfaction

Our solutions are used in the precast concrete industry, in mechanical and plant engineering, sensor technology, the automotive industry and the food industry.

The merger with the RATEC Group from Hockenheim has enabled us to expand our product range and strengthen our global sales structures. This synergy enables us to find a customised solution for almost any challenge – because special solutions have long been part of our daily business.

Our motto 'Strength through know-how' is more than just a guiding principle – it describes what we stand

for: Quality, flexibility and customer satisfaction. A dedicated team works passionately every day to fulfil the high demands of our customers. Thanks to continuous process optimisation, we adapt flexibly to new market developments. The current economic situation also presents us with challenges. Nevertheless, we are creating positive momentum and maintaining our presence with targeted marketing campaigns and creative customer promotions, such as our popular 'MTK coffee'.

In 2024, MTK celebrated its 40th anniversary – a special occasion that we celebrated on a sunny Saturday together with colleagues from

RATEC, customers, suppliers and family. Under the motto 'Funfair & Museum Tour', the guests experienced a special day, rounded off by an impressive corporate film that showcased our team and our values.

Even in challenging times in the construction industry, we work together with our customers to find innovative solutions and new approaches – because together we are strong!



RATEC America Corp.: Relocation to a new office & customised solutions

How we are growing the US market with new technologies and a modern location



RATEC America has found a new home in this office building in St. Petersburg, FL



Siderrails for TT slab production are in high demand in the USA

In addition to the proven RATEC programme, RATEC America also offers tailored solutions for the American market. These include tilting tables, prestressing beds for prestressed concrete elements and specialised formwork solutions for retaining walls, beams, columns and stairs.

A current example is a project for Finrock: RATEC America supplied six hydraulic tilting tables with a length of 20 metres and a width of 4.80 metres. The strand pattern is preconfigured vertically and horizon-

tally in a 2-inch grid, with a maximum tensioning force of 89 kips/ft.

TT slab shuttering, which was specially developed for the production of prestressed TT slabs, is also in particularly high demand.

Since spring 2024, the office of RATEC America has been relocated to a new site in St. Petersburg, Florida – just 10 kilometres from the previous headquarters in Clearwater.

The modern premises offer better facilities and an optimised setting for customer visits.

Production will remain in Clearwater for the time being, with an area of around 1300 square metres. A site for a new production facility has already been secured – the planned new building will significantly expand production capacity.



Hydraulic tilting table for prestressed elements