WE CREATE SUCCESS

PLANNING – CONSULTING – REALISATION

REYMANN TECHNIK

One group – many benefits

You want to rethink ways of living and building? Are you planning a precast concrete production plant? Or do you already have one and would like to modernise or update the equipment? No matter, what your objective is at the moment, Reymann Technik and its partners provide you with advise and support as an integrated systems partner in all questions concerning precast concrete production.

REYMANN TECHNIK	RATEC	MTK
Consulting and engineering partner for the precast concrete industry	Product and systems provider for the precast concrete industry	Developer and producer of permanent magnet systems for industrial applications

LOCATIONS

RATEC America Corp. (USA), RATEC Asia Pte. Ltd. (Singapore),
RATEC S.L.U. (Spain/Latin America)

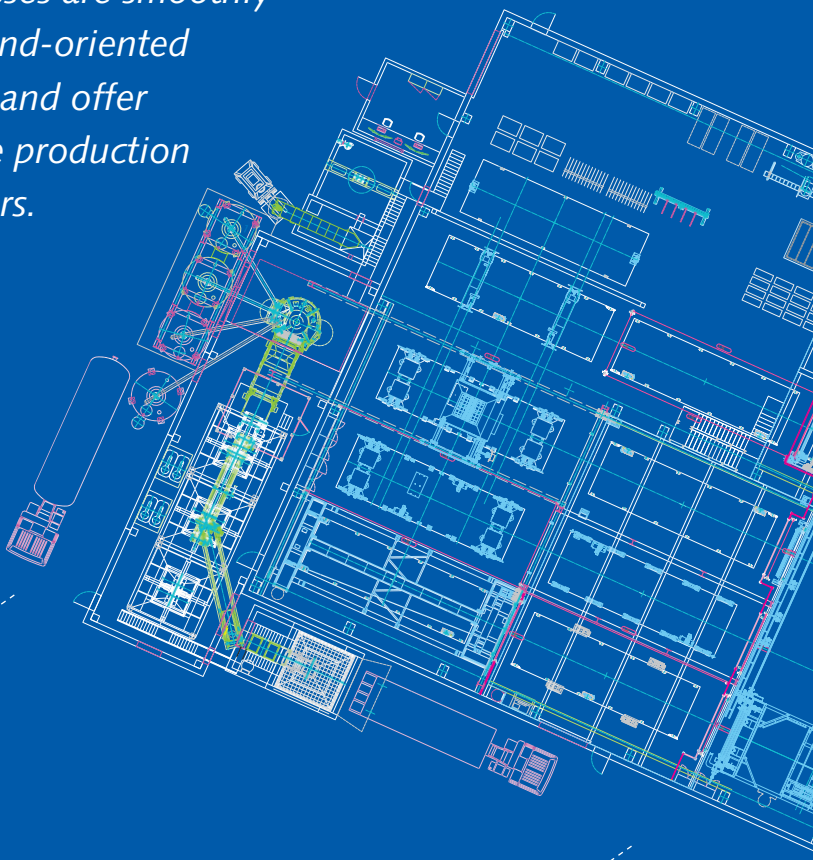
Reymann Technik
A success story over two generations

As the oldest independent engineering office for the development and realisation of modern precast concrete plants Reymann Technik is able to do more. With investment and feasibility studies, we provide you with a solid foundation for your project decisions. We provide you with thought-provoking impulses that bring you substantial benefits and play a decisive role in shaping your success.

We know your challenges

Our holistic services for precast concrete plants

Holistic planning is the basis for long-term successful solutions. With almost all challenges, the whole is often more than the sum of its parts. We keep an eye on both to ensure that all components and processes are smoothly integrated. In doing so, we act in a demand-oriented manner in the interests of our customers and offer an external view of your precast concrete production that is independent of machinery suppliers.



OPTIMISATION OF KEY FIGURES AND PROCESSES

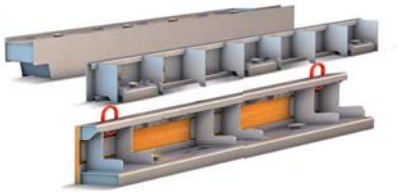
Analysis of existing manufacturing processes according to capacity, productivity and product-market fit, so that growth and increased profitability are achieved while taking into account the company's own liquidity.

RATIONALISATION

We subject all processes to a critical holistic analysis, the result of which is concrete recommendations for action, which we will of course assist you in implementing.

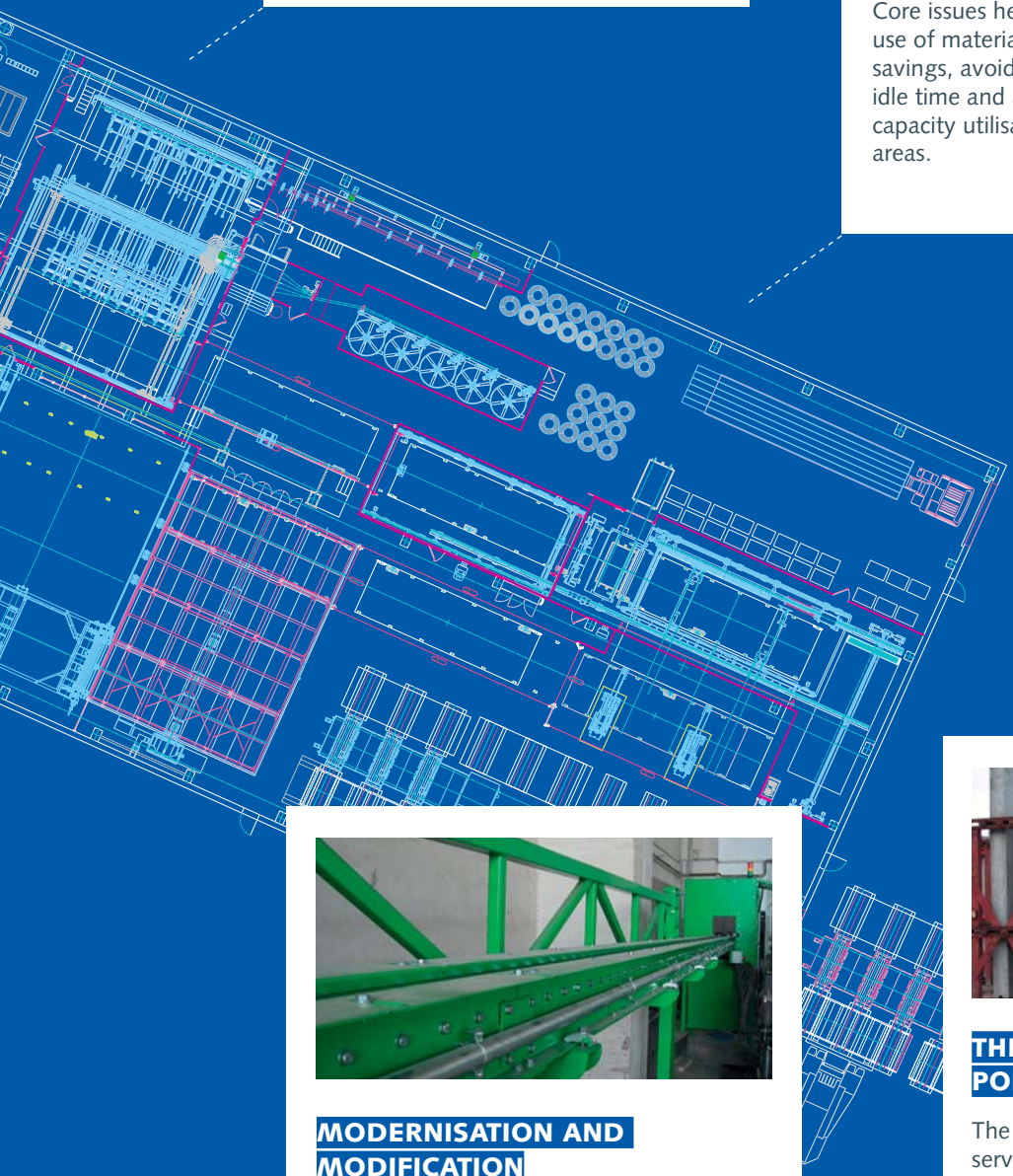
AUTOMATION AND DIGITALISATION

When planning new plants or upgrading existing plants, automation and the implementation of digital processes play an increasing role. As a partner, we keep an oversight and an eye on the complete process landscape.



IMPROVING THE USE OF MATERIALS

Core issues here include optimising the use of materials, exploiting potential savings, avoiding bottlenecks, but also idle time and a balanced distribution of capacity utilisation across all production areas.



MODERNISATION AND MODIFICATION

Modifications during ongoing operations present many customers with an enormous logistical and planning challenge. With numerous experiences from previous tasks, we bring your modernisation and renovation project safely over the finish line.

THE OPTIMAL PRODUCT PORTFOLIO

The optimisation of the product mix serves the efficient utilisation of the production facilities, and helps to identify growth or expansion potential and achieve market-oriented flexibility.

"EVEN THOUGH WE DRAW ON OVER 40 YEARS OF EXPERIENCE, WE APPROACH EVERY PROJECT WITH A FRESH EYE."

Andreas Gewis, Director Reymann Technik

For over 40 years, the Reymann group of companies has been developing the better ideas for efficient precast concrete production at the Hockenheim site

We bring your ideas on the road
Our services for planning and realisation

We support you in the planning, conception, commissioning and start-up of your precast concrete plant. If desired, we can realise a complete turnkey solution as a general contractor or assist you in all phases as an external project management.

Quality is no coincidence. Our engineers are perfectionists in project management. Our customers and our success-oriented rationalisation concepts deserve outstanding execution quality and punctual commissioning. Reymann Technik retains control beyond delivery. Tendering, procurement and installation supervision are in the hands of the project engineers who developed a plant from the very beginning.

Deadline coordination and order processing function reliably and trouble-free. A competent after-sales service checks the production processes and trains factory employees according to the latest standards. Project support extends well beyond commissioning.

OUR PLANNING AND CONSULTING SERVICES

- **Project Management**
  Support from the initial idea through feasibility studies, planning and commissioning up to support in the start-up phase
- **Tender Management**
  Preparation and implementation of bidding processes up to final supplier selection by the customer
- **Realisation**
  Project management, on request realisation of turnkey solutions as general contractor
- **Delivery**
  Delivery of technical system components from all machinery suppliers on the basis of tender processes
- **Modernisation and Modification**
  Analysis, planning and implementation of modernisation and expansion programmes

Expert know-how for your project
Our analysis and consulting services

Our customers benefit from a wealth of experience that guarantees high investment security. By being independent of machinery suppliers, a „relentless“ process analysis and a production concept, that is solely geared to the success of our customers, becomes possible.

Our analyses are in demand both at an early planning stage of a new plant as well as for existing production facilities. Feasibility studies provide investment security. Targeted analyses of production processes or specific areas provide you with valuable indications of optimisation potential. This optimisation does not necessarily entail high investments. Often it is the details that add up to optimisation. For this reason alone, an independent view "from the outside" is worthwhile.

OUR ANALYSIS AND CONSULTING SERVICES

- **Feasibility Studies**
  Comprehensive analysis of your project from both a technical and economic perspective

- **Tender Procedures**
  Support with requests for proposals, bid comparisons and contract award for equipment of the production plant

- **Plant and Workplace Analysis**
  from a production, safety or qualitative perspective with practical recommendations for improvement

- **Multidimensional Optimisation in the areas of e.g.**
  - Product challenges
  - Product mix
  - Capacities
  - Investment
  - Degree of automation
  - Future prospects
  - Existing restraints
  - Working conditions and more

Thorough planning leads to simple solutions even with difficult tasks. The result in the left is the „smallest circulation system" for wall widths up to 3.54 m, with the reduction of staff effort while improving working conditions.

Your success is our motivation
Our services in the field of development and rationalisation

The constantly evolving technical standard of equipment for precast concrete plants holds enormous potential for efficiency and production capacity. In combination with intelligent planning and a 360 degree perspective in the interests of the customer, this creates plant solutions with a guarantee of success.

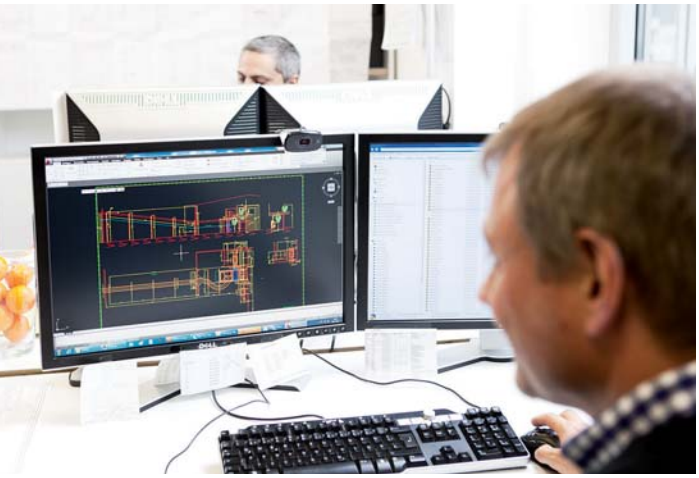
Since our foundation in 1974, we have been significantly involved in setting some major milestones in plant design in precast concrete production.

These include, for example, CAD/CAM-controlled circulation systems, suction turning frames in double wall production, exit and transport technology, laser projection in circulation systems, the introduction of magnet-based formwork systems and the development of upcrete® pump technology. These are just some of the innovations we have initiated.

The success of these developments is based on trusting cooperation with our customers, precise analysis and the courage to pursue new paths.

CORE TOPICS IN THE AREA OF DEVELOPMENT AND RATIONALISATION

- **The future of precast concrete production**
  Market observation and analysis of trends and their implications
- **Integration of new technologies and solutions**
  With our knowledge of current developments in machine technology, we are able to propose economic solutions based on your needs
- **Rationalisation of precast concrete plants**
  Analysis and optimisation of processes and resources for a successful increase in efficiency



"THE AUTOMATED CONCRETE PLANT IS EVOLVING FROM A SUPPLIER TO A GENERATOR OF IMPULSES."

Wolfgang Reymann, Founder (Interview in BFT 10/1996)

Suction turning frame in double wall production (left)

Magnetic lifting beam for formwork handling (right)

Our Project Highlights Worldwide

Denmark, Boligbeton
Factory planning, general contractor

Spain, HLE
General contractor

USA, DZ Precast Solutions Inc.
read more on pages 14 – 17

Panama, SCI
Planning and realisation

Peru, 2nd Modular Housing Plant, upcrete®
read more on pages 18 – 19

Barbados, Preconco / Carribean Homes
Factory planning, solid wall production

REYMANN TECHNIK MILESTONES

1974
Establishment of Reymann Technik by Wolfgang Reymann and development of a system for hollow core slab production.

1984
Precursor of a central transfer system (CTS) for battery production of solid and brick walls.

1987
1st CAD/CAM-controlled circulation system for the production of girder slabs goes into operation

1989
CAD/CAM-control for the first time used in double-wall production

1994
Founding of the sister company RATEC, that specialises in the further development of the ideas for intelligent formwork solutions

Sweden
Factory planning, Battery production

Germany, Schneider Betonfertigteilewerk GmbH
read more on pages 20 – 21

Greece, Prohellas
Factory planning, multifunctional plant for girder slabs and double walls

Australia, Austral Precast
Factory planning, solid wall production

1996

A revolution in formwork technology through integration of switchable magnets in the formwork

1998

First laser in a precast concrete plant for displaying formwork geometries in façade production

2002

Reymann Technik is involved in the development of new manufacturing and production methods for the highly efficient production of buildings using modular construction systems. First prototype houses are erected in a very short time.

2005

Introduction of upcrete®, a holistic production system for vertical production and production of volumetric elements, with a particularly high surface quality

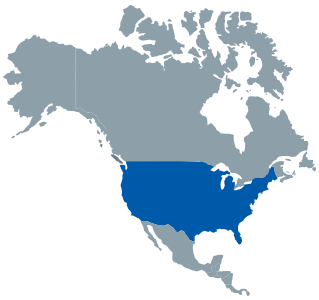
2012

The world's first upcrete® modular housing plant goes into operation in Peru. Reymann Technik planned the whole production and realised it completely as general contractor.

2021

The largest project in the company's history is realised in the USA. One of the most modern automated circulation plants in North America is realised by Reymann Technik as general contractor.

SOLID WALLS / SLABS MULTIFUNCTIONAL PLANT



Rethinking housing and construction

A precast concrete plant for the largest retirement community in the USA

In the first half of 2021, what is currently probably North America's most modern pallet circulation plant for the production of precast concrete elements for residential housing started operation in Florida. The Villages, one of the largest real estate developers in the United States, is setting a historic milestone by converting to precast concrete construction.

Spending their retirement in the mild climate of the "Sunshine State" with a high standard of living and in a safe community is what makes The Villages so attractive to many U.S. residents.

The 3 production halls in phase 1 have an area of approximately 650 x 220 feet (about 200 x 68 meters).

Reymann Technik carried out the project as planner and general contractor - the largest in the company‘s history. The project was implemented in close coordination with the customer and its architects, as well as the appointed machinery suppliers.

The plant went into operation with Phase 1 in the spring of 2021. The plant, located at Governor Rick Scott Industrial Park, is currently the most highly automated precast concrete production facility in North America. A further expansion phase 2 is already planned.

Completely automated formwork logistics from storage, retrieval and placing up to cleaning

TOP FACTS

- Automated pallet circulation plant
- Products:
  Solid walls / slabs,
  Insulated exterior walls,
  Supplementary columns / pillars
- Planning and realisation as general contractor
- Total of 3 halls with an area of approximately 200 x 68 m
- Plant capacity designed for 30 houses per week

A special feature of the highly automated circulation system is the solution for cast-in windows including the glass segments. A special formwork solution ensure, that they are protected from dirt and damage throughout the entire production process.

Customer support extends far beyond commissioning and includes extensive training and continuous support for production management in order to gradually achieve the targeted capacity and plant performance.

„WE WANT TO ENSURE THAT THE PROCESSES ARE DESIGNED IN SUCH A WAY THAT OUR CUSTOMER BENEFITS FROM SUCH AN INVESTMENT AS QUICKLY AS POSSIBLE AND IS ALSO SUCCESSFUL WITH IT IN THE LONG TERM."

Cast-in windows: a specialty of the plant

The handling in the outside area is done by a mobile gantry crane, which stores and retrieves the wall transport racks

At the tilting station, the finished elements are lifted off and loaded onto transport frames

PROVIDED SERVICES

REYMANN TECHNIK	RATEC	RATEC America
• Plant design • Project management and realisation as general contractor	• Supply of the magnetic formwork components, including the block-out solutions for windows and doors	• Supply of the wall transport racks for exit carriages and outside storage • Supply of additional formwork for columns / pillars

MODULAR CONSTRUCTION

2nd Modular Housing Plant in Peru

The success story of upcrete® modular housing continues

Affordable, yet comfortable and safe housing to meet the growing demand in living space – this is what project developers and national governments in many regions of the world are striving for. Llaxta is leading the way in Peru. The company has grown from a start-up to one of the country's most important real estate developers in the last ten years – with the help of Reymann Technik planning and production technology from Germany.

Roofing ceremony for the first module

The success story began in 2012 with the first project in Ica, south of the capital Lima. The production facilities for the modular houses and necessary formwork technology were jointly made possible by Reymann Technik as the planning and engineering office and Ratec as the component supplier. Within 10 months, the first production plant for precast modular houses in South America was built and the evolution of the new settlement of „Las Piedras de Buena Vista“ started. In the meantime, further development projects have been created within a radius of up to 50 km from the first project, for which the room modules and concrete elements are manufactured in the plant in Ica.

„MODULAR HOUSING WITH UPCRETE® IS, UNDER THE RIGHT CONDITIONS, A CONCEPT THAT IS PARTICULARLY PROMISING IN REGIONS WITH A HIGH DEMAND FOR AFFORDABLE HOUSING WITHIN A SHORT PERIOD OF TIME.“

The successful concept was then being transferred to other parts of the country. In the beginning of 2021, the second modular housing plant went into operation in northern Peru, in the Piura region. The house concept for the new „Los Altos de Castilla“ settlement was tailored to the region and its needs. Each house consists of one module with a total area of 25 square meters, divided into living room/kitchen, bedroom and bathroom.

The house can be extended later on the associated plot according to the needs of the residents. This project is also ambitious: more than 20,000 homes are to be built there with the objective to provide the residents with a higher quality of life

Reymann Technik was again commissioned as planner and general contractor, adapting the concept of the first plant and further developing it from the experience of the previous project.

The two modular housing plants are unique not only in South America, but worldwide. However, there is great interest in other countries for similar concepts.

For production in installation position, the 35 t shrinking core is placed inside the mould for casting and lifted out for demoulding

PROVIDED SERVICES

REYMANN TECHNIK	RATEC
• Plant design and project management	• Supply of the 3D Moulds and UPP 100 Pump car

GIRDER SLABS / DOUBLE WALLS

On the road to success
Integration of a new pallet circulation plant in an existing production

Schneider Betonfertigteile GmbH recently invested in a new multifunctional plant for the production of girder slabs and double walls, thus laying the foundation for capacity expansions. Reymann Technik was commissioned with the planning of the plant and accompanied the realisation of the new building as project management partner.

Turning device and clamping of the 1st shell for the double wall

Schneider looks back on almost 60 years of history, which began in the late 1960s in Philippsburg, Baden-Württemberg. The production at the Philippsburg site consists of a total of three production halls with different equipment, in which the entire product mix is manufactured. The decisive factor for the investment decision was the increased order situation with limited daily capacity, where the existing production gradually reached its limits.

„INTELLIGENT PLANNING, AN IMPLEMENTATION THAT IS INDEPENDENT OF THE COMPANY'S OWN MACHINE RANGE AND A SUPPLIER TEAM THAT WORKS WELL TOGETHER FORM THE FOUNDATION FOR THE SMOOTH REALISATION OF SUCH A PROJECT."

In a first step, Reymann Technik GmbH was commissioned to carry out a feasibility and investment study. The feasibility study analysed existing production possibilities and identified opportunities to expand the capacity of the main products.

Accommodating the new plant on the existing site while taking into account the existing buildings was one of the challenges in this project.

The plant equipment corresponds to the latest state of the art in lattice girder slabs and double wall production. Particularly noteworthy are the completely automatic shuttering logistics with shuttering, storage and deshuttering robots, as well as automatic shuttering transport and cleaning. All other machinery equipment of the planned circulation system, such as the reinforcement processing, the automatic concrete spreader, various compaction stations, automatic rack feeder and curing chamber were also precisely adapted and coordinated to the special parameters and requirements of the customer and its products.

The coordination of the individual suppliers and service providers on the part of the Reymann Technik project management also ensured that the components and their planned environment were perfectly coordinated and demonstrably fulfilled the desired key figures.

PROVIDED SERVICES

REYMANN TECHNIK	RATEC	MTK
• Feasibility study • Plant design • Project management and realisation	• Supply of magnetic formwork components	• Supply of the build-in magnets for the shuttering system

BATTERY PRODUCTION

Vertical battery production
Space-saving production solutions

Besides horizontal stationary or circulation plants, vertical production of solid elements in battery moulds has also become a common approach. Reymann Technik has designed plants for battery production in various projects around the globe.

Planning of a battery production: Work stations with movable inner panels

Battery formwork with movable pump car

Vertical production in battery moulds combines both qualitative and process-related advantages. For the battery moulds, only a smaller production area is required.

The produced wall elements can be stored vertically on a relatively small storage area. With end-to-end vertical logistics from production to transport to assembly, there are additional advantages for reinforcement, transport anchor systems and time expenditure.

One area of expertise is battery production in combination with upcrete® technology, in which the formwork is pressure-filled from below or from the side by a pump. Reymann Technik pioneered this process and played a key role in the development of the technology.

„VERTICAL PRODUCTION IN BATTERY MOULDS COMBINES BOTH QUALITATIVE AND PROCESS-RELATED ADVANTAGES.“

Reymann Technik designs and optimises corresponding battery production plants based on the customer‘s element portfolio, develops workstation systems and provides support in process optimisation to improve plant performance.

Filling connection for connecting the pump hose for filling from below

PROVIDED SERVICES

REYMANN TECHNIK	RATEC
• Feasibility study • Plant design • Project management and realisation	• Supply of formwork components and upcrete® pump technology

MODULAR CONSTRUCTION

Volumetric elements production

Production of bathroom pods in the Philippines

Sanitary or bathroom pods, as prefabricated, pre-finished elements, are a common application of volumetric precast concrete elements, often used in residential or hotel building projects. In Asia, the term PBU – Prefabricated Bathroom Units, is commonly used to describe such elements.

The moulds are able to be reconfigured up to 63 different marking or modules types

RATEC Asia provided significant support in planning and realisation up to commissioning

A new PBU production facility went into operation in the Philippines in the beginning of 2022. The country's leading precast manufacturer produces PBU for hotels and residential buildings there.

In addition to the formwork planning and optimization, the overall processes in production were optimized as part of the installation planning, minimising handling and processes to optimise output. Special considerations in alignment of formwork, crane planning and equipment placement are taken to ensure this.

The installed formwork solution is the flexible 3D mould kit developed by RATEC. Core and outer panels of this mould type consist of various standardised parts that can be exchanged and thus adapted to other room dimensions. This means that the mould can be used in an economically efficient way even if the production volume of a room type is low, thus offering an adequate solution even for smaller projects.

„IN THE CLOSE COORDINATION BETWEEN PLANT DESIGN AND EQUIPMENT PLANNING WE WERE ABLE TO OFFER A COMPREHENSIVE END-TO-END SOLUTION FOR THE CUSTOMER."

In the cooperation between production planning and mould development, we were able to offer a comprehensive end-to-end solution for the customer, from the development of the PBU system to the production planning and plant design, the supply of the moulds and turning station and the production support. This means that the customer can rely on the optimal, most practical and cost-effective solution.

A suitable turning station was included in the equipment delivery

PROVIDED SERVICES

RATEC Asia	RATEC
• Development of construction system • Project management • Realisation	• Development and delivery of the 3D mould equipment and turning station

RATEC Asia Pte. Ltd.
Local planning expertise

RATEC Asia Pte. Ltd. is also available to our customers throughout Asia as a planning and consulting partner.

With a comprehensive understanding of regional requirements and a wealth of experience in the implementation of precast concrete building projects, the team can offer decisive added value, especially in the development of building systems and the creation of element drawings based on house concepts. This applies to projects based on panelised precast concrete elements as well as to modular construction projects or PPVC.

This extends our range of planning services for production plants and provides necessary support especially for companies that are completely new to precast production.

In addition to feasibility and investment studies, the offer also includes development of construction systems as well as development of production plants, project management and production support after commissioning. In this way, the range of services offered by Reymann Technik is complemented and expanded regionally – to the benefit of our customers, who can only profit from these synergies.

RATEC ASIA 励德

The team or RATEC Asia, from left to right: Cesar Deguilmo Jr., Raymond Chan, Sylvia Chai

How can we support you?
Let's talk!

We design and realise successful precast concrete plants and support our customers with the right strategies to become more efficient, more flexible or simply even better. So that your customers are even more satisfied!

In the beginning, there is always the first step. Or a first conversation. Do you have a current challenge or question? Then we should talk!

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