



Concrete Plant International

منشأة الإسمنت العالمية

2 | 2021

www.cpi-worldwide.com

NEWS ICCX Western Europe - digital precast building concepts **CONCRETE TECHNOLOGY** Energy-efficient cooling and heating solution for enhancing concrete quality under demanding conditions **CONCRETE PRODUCTS** Quality concrete products for the U.A.E. market **CONCRETE PIPES AND MANHOLES** Plasticizer-free drinking water lining system **PRECAST CONCRETE ELEMENTS** 3D moulds for Saudi Vision 2030

TECHMATIK[®]
A COLUMBIA MACHINE, INC. COMPANY

WORLDWIDE MOLDS

ANY SHAPE FOR ANY MACHINE



www.techmatik.pl



masa

Milestone to your success.

Our solutions for your success



www.masa-group.com

Masa covers the complete range of machinery and ancillary equipment for the building materials industry: Batching and Mixing, Concrete Blocks/Pavers, Kerbstones, Concrete Slabs, Sand Lime Bricks and Autoclaved Aerated Concrete (AAC) Products.

All technical solutions are individually planned, designed, adapted and realised for each customer, resulting in one supplier and one individual contact person.

Masa GmbH

Masa-Str. 2
56626 Andernach
Germany
Phone +49 2632 9292 0
Service Hotline +49 2632 9292 88

Masa GmbH

Porta Westfalica
Osterkamp 2
32457 Porta Westfalica
Germany
Phone +49 5731 680 0

Masa Middle East FZCO

P.O. Box 16867
Jebel Ali Free Zone
Dubai, United Arab Emirates
Phone +971 4 8833-476
Mail masa_me@emirates.net.ae

info@masa-group.com
service@masa-group.com
www.masa-group.com

Masa - made in Germany.





Dr.-Ing. Holger Karutz



Alexander Olbrich

In the right place at the right time

The most challenging reality during the last months was, for many people and companies, the unpredictability of the situation. While normally in private and business life the result of most activities was dependent on own efforts, capabilities and also sometimes some luck, all this became less important due to the fact that whatever you might have planned today might possibly be changed tomorrow, by circumstances beyond our control.

Nevertheless, life goes on and we all have to adapt to the new reality. One thing that was luckily always working well was the digital world with internet connections that were to a large extend more used than before the pandemic. In today's world, online live communication has become an accepted standard alternative to the good old real world where we could team up physically for meetings with customers and colleagues.

Our goal as publishers and event organizers was and is always to connect people and companies. When we realized the situation we had to deal with in 2020, we established a unique online platform for the concrete industry that is one of a kind looking at its size and its technical options for attendees and exhibitors: ICCX digital 365. (www.iccx.digital) has established in the meantime as digital alternative to the well known ICCX International Concrete Conferences & Exhibitions that were successfully held also in Sharjah in the past. Attendance is complimentary for concrete professionals and we invite you to explore the options you have at ICCX digital 365., preferably during our next Live Day on September 15, 2021 where you will find many opportunities for live networking with industry professionals from around the world.

And should you miss real events for the concrete industry, packed with 70+ dedicated exhibitors and high quality presentations, feel free to come to Germany in November to ICCX Western Europe (www.iccx.org)! We welcome you at any ICCX event to come - and you can be assured that at ICCX you are always in the right place at the right time!

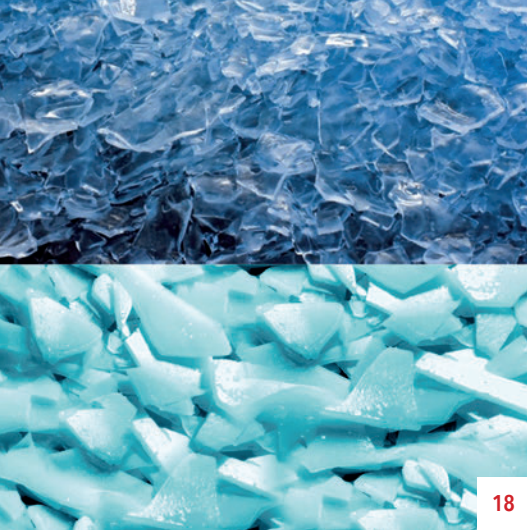
في المكان المناسب والوقت المناسب

لقد كان الواقع الأكثر تحديًا، للعديد من الأشخاص والشركات، خلال الأشهر الماضية يتمثل في تعذر التنبؤ بالوضع. فقد كانت نتيجة معظم الأنشطة في الحياة الخاصة والعملية تعتمد عادةً على الجهود والقدرات الخاصة وعلى بعض الحظ أحيانًا، إلا أن كل ذلك أصبح أقل أهمية نظرًا لحقيقة أن كل ما كنت تخطط له اليوم قد يتغير غدًا، بسبب الظروف الخارجة عن إرادتنا وسيطرتنا. ومع ذلك، ستستمر الحياة وسيلزم علينا جميعًا التكيف مع الواقع الجديد. والشيء الوحيد الذي كان لحسن الحظ يعمل جيدًا دائمًا هو العالم الرقمي باستخدام اتصالات الإنترنت، بل أصبح يُستخدم على نطاق واسع أكثر مما كان عليه قبل الجائحة. ففي عالمنا اليوم، أصبح الاتصال المباشر عبر الإنترنت بديلًا قياسيًا مقبولًا للعالم الواقعي القديم حيثما كان يمكننا أن نتعاون فعليًا لعقد الاجتماعات مع العملاء والزملاء.

لقد كان هدفنا كناشرين ومنظمي أحداث يتمثل في الربط بين الأشخاص والشركات وسيظل كذلك دائمًا. وعندما أدركنا الموقف الذي كان علينا التعامل معه في عام 2020، أنشأنا منصة رائعة عبر الإنترنت خاصة بقطاع صناعة الخرسانة تعتبر فريدة من نوعها بالنظر إلى حجمها وخياراتها التقنية للحضور والعارضين: وجرى إنشاء منصة ICCX digital 365. (موقع الويب: www.iccx.digital) في غضون ذلك كبدل رقمي لمؤتمرات ومعارض الخرسانة الدولية ICCX المعروفة التي كانت تُقام بنجاح أيضًا في الشارقة في الماضي.

والحضور مجاني للمهنيين المتخصصين في الخرسانة وتدعوكم لاستكشاف الخيارات المتاحة لكم في منصة ICCX digital 365.، ويفضل أن يكون ذلك خلال يوم البث المباشر التالي في 15 سبتمبر 2021 حيث ستجد العديد من الفرص للتواصل المباشر مع المهنيين المتخصصين في هذا المجال من جميع أنحاء العالم.

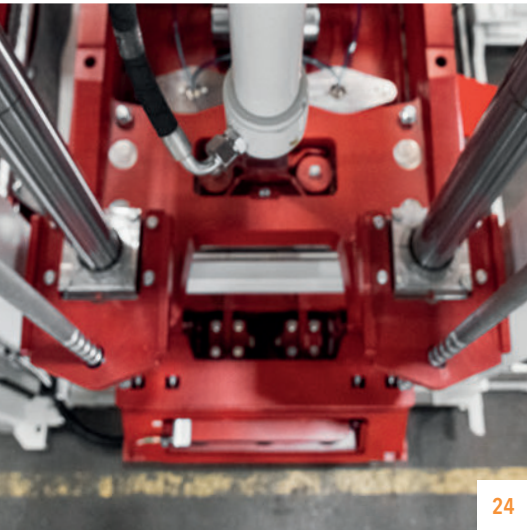
وإذا فاتتكم الأحداث الحقيقية المتعلقة بقطاع صناعة الخرسانة، المكتظة بما يزيد عن 70 عارضًا مخصصًا وعروضًا تقديمية عالية الجودة، فلا تتردد في القدوم إلى ألمانيا في نوفمبر إلى حدث ICCX Western Europe (موقع الويب: www.iccx.org)! فنحن نرحب بكم في أي حدث من أحداث ICCX القادمة - وفي ICCX، يمكنكم أن تتقوا دومًا أنكم في المكان المناسب والوقت المناسب!



18

SECTIONS

Editorial	3
Imprint	6
Advertiser's List	74



24



48

CONTENTS

NEWS

- 7 Extension of the information offer
ICCX digital 365. becomes more comprehensive
3.-4. November 2021
- 10 **ICCX Western Europe - digital precast building concepts**
Besser Company, Alpena, Michigan 49707, USA
- 14 **Kevin Curtis Retires, Besser Company Names Ryan Suszek CEO & President**
Paul Maschinenfabrik GmbH & Co. KG, 88525 Dürmentingen, Germany
- 15 **Paul sets the course for the future**
Leading the worldwide sales and operations teams
- 16 **Afinitas promotes Daniel Bühler to Global Division President**

CONCRETE TECHNOLOGY

- 18 KTI-Plersch Kältetechnik GmbH, 88481 Balzheim, Germany
Energy-efficient cooling and heating solution for enhancing concrete quality under demanding conditions

CONCRETE PRODUCTS / CAST STONE

- 24 Topwerk Group, 57299 Burbach-Wahlbach, Germany
Quality concrete products for the U.A.E. market
- 31 Badinblock s.r.l., 33083 Villalta di Chions, Italy
Passion drives Italian manufacturer of machinery to the Middle East market
- 35 Kobra Formen GmbH, 08485 Lengenfeld, Germany
International Architectural Projects - Wausau Tile Inc.
- 46 KBH Maschinenbau, 87760 Lachen, Germany
Competitive edge by diversification

CONCRETE PIPES AND MANHOLES

- 48 Agru Kunststofftechnik GmbH, 4540 Bad Hall, Austria
Plasticizer-free drinking water lining system

PRECAST CONCRETE ELEMENTS

- 50 Construx bv, 8531 Hulste, Belgium
Flexbox: the adjustable lift shaft and box-culvert mould
- 52 Bianchi Casseforme srl, 43045 Fornovo di Taro (PR), Italy
New production facility at Litecast Precast

CONTENTS

- 56** Moldtech S.L., 41500 Alcalá de Guadaíra, (Sevilla), Spain
3D moulds for Saudi Vision 2030
- 58** Reymann Technik GmbH, RATEC GmbH
Second modular housing plant successfully put into operation in Peru
- 62** Echo Precast Engineering NV, 3530 Houthalen, Belgium
Boost a hollow core plant
- 66** Elematic, 37801 Akaa, Finland
How to modernize an old factory in under a year
- 69** Progress Maschinen & Automation AG, 39042 Brixen, Italy
Successful installation of mesh welding plant in Australia during pandemic

READYMIX CONCRETE

- 72** Lintec & Linnhoff Maschinen Pte Ltd
Landmark plant delivery into UAE



Prensoland est. 1959
BUILDING ORIGINS

NO LIMITS

**PRECAST AND PRESTRESSED
CONCRETE EQUIPMENT
MANUFACTURER SINCE 1959.**

C/ Industria, 5-9 - 08592 St. Martí de Centelles - Barcelona - Spain
T. +34-938.440.125 - contact@prensoland.com



SCAN ME

Publishing Company:

ad-media GmbH
 Industriestr. 180 · 50999 Cologne · Germany
 T +49 2236 962390 · F +49 2236 962396
 info@ad-media.de · www.ad-media.de
 www.cpi-worldwide.com



Concrete Plant
 International



Place of publication: ISSN:
 Cologne, Germany 1862-3662

Managing Directors:
 Dr.-Ing. Holger Karutz · Alexander Olbrich

Editor-in-Chief:
 Dr.-Ing. Holger Karutz h.karutz@cpi-worldwide.com

Editors:
 Dipl.-Ing. Mark Küppers m.kueppers@cpi-worldwide.com
 Dipl.-Ing. Michael von Ahlen m.vonahlen@cpi-worldwide.com
 Prof. Hans-Dieter Beushausen h.beushausen@cpi-worldwide.com
 Dipl.-Ing. Juergen Glaesle j.glaesle@cpi-worldwide.com



Dipl.-Ing. Mark Küppers
 Dipl.-Ing. Michael von Ahlen
 Prof. H.-D. Beushausen
 Dipl.-Ing. Juergen Glaesle

Advertisement:

Gerhard Klöckner g.kloekner@ad-media.de
 Alexander Olbrich a.olbrich@ad-media.de
 Gabriele Pianta g.pianta@ad-media.de
 Patrick Gürtler p.guertler@ad-media.de

Design:
 Anne-Marie Achnitz · André Besgens · Miriam Scheunemann production@ad-media.de

Accountancy:
 Sandra Borchert · Christian Hoffmann accountancy@ad-media.de

Subscription service:
 Christian Hoffmann subscription@ad-media.de

Head of Events:
 Thomas Rieck events@ad-media.de

External Data Protection Officer:
 Ben Green Consultancy UG dataprotection@ad-media.de

Bank connection:
 Deutsche Bank, Account no.: 6800080, BIC: 370 700 24
 SWIFT CODE: DEUTDEBKOE, IBAN-No.: DE88370700240680008000

Print / Enclosures and supplement delivery:

Kopp Druck und Medienservice GmbH
 Dieselstraße 2 · 50996 Cologne · Germany

Postmaster | send address changes to:
 CPI - Concrete Plant International, Industriestraße 180, 50999 Cologne, Germany

All Rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright owner. Authors who submit texts and/or pictorial material („material“) for publication grant ad-media the non-exclusive right, unlimited in time and territory, to publish the material. This applies to the media published by ad-media as well as to international trade publications in which employees of ad-media collaborate, and includes both the printed and online sector, including mobile applications for smartphones, etc. The authors guarantee that they possess all rights to the material submitted that are necessary for the aforementioned granting of rights to ad-media. The authors indemnify ad-media against all claims asserted by third parties on account of usage of the material in accordance with these general terms and conditions. ad-media accepts no liability for the correctness of the contents of the material submitted by the authors. All views expressed in this journal are those of the respective contributors and are not necessarily the opinions of the publisher, neither do the publishers endorse any of the claims made in the advertisements.

CPI Asia

Zhang Jinying | M +86 13920414614 | asia@cpi-worldwide.com

CPI Brazil

Soy Cho | M +55 11 98965 3005 | brazil@cpi-worldwide.com

CPI Indonesia

Silvianie Supian | indonesia@cpi-worldwide.com

CPI Italy

Gabriele Pianta | T +49 2236 962390 | g.pianta@cpi-worldwide.com

CPI Korea

Moon-Hi Lee | M +49 173 5356753 | M +82 10 42806473 | korea@cpi-worldwide.com

CPI Latin America (without Brazil) / South West Europe

Gabriele Pianta | T +49 2236 962390 | g.pianta@cpi-worldwide.com

CPI Middle East

Kambiz S. Pour Kardan | T +98 21 88888191 | middleeast@cpi-worldwide.com

CPI North America

Judi Taylor | T +1 770-672-7082 | j.taylor@cpi-northamerica.com

CPI Oceania

Michael Khrapko | T +64 9 629 5992 | oceania@cpi-worldwide.com

CPI Poland / Czech Republic

Agnieszka Spychalska | T +48 697 619111 | poland@cpi-worldwide.com

CPI Russia

Timur Dmitrov | T +7 4822630039 | russia@cpi-worldwide.com

CPI South East Asia

Michael Lazar | T +65 6861 5668 | southeastasia@cpi-worldwide.com

CPI Southern Africa

Prof. Hans-Dieter Beushausen | T +27 82 7375057 | southafrica@cpi-worldwide.com

CPI Turkey

Gabriele Pianta | T +49 2236 962390 | turkey@cpi-worldwide.com

Supporters or Members of:



Further editions:

- BWI · BetonWerk International
- CPI · Concrete Plant International (English worldwide Edition)
- CPI · Concrete Plant International (North America Edition)
- PHI · Planta de Hormigón Internacional
- C&PI · Calcestruzzo & Prefabbricazione International
- PBI · Préfa Béton International
- CPI · Международное Бетонное Производство
- ZBI · ZakładyBetonowe International
- CPI · Concrete Plant International (Chinese Edition)
- CPI · Concrete Plant International (Indian Edition)

Printed in Germany ©1998 by ad-media GmbH



Further publications:



AAC worldwide is the only international trade journal for the auto-claved aerated concrete industry (AAC-industry). Each issue covers the entire spectrum of the industry - from trends and news from the world's individual markets to the latest developments in research and science, state-of-the-art in the production of AAC, building material applications and construction solutions and last but not least, interesting buildings from all over the world.

www.aac-worldwide.com

Extension of the information offer

ICCX digital 365. becomes more comprehensive



منصة ICCX digital 365. أصبحت أكثر شمولاً

The ICCX digital 365. has been permanently open to visitors since March and enables access from anywhere in the world to technical information from the exhibiting suppliers and plant manufacturers from the concrete and precast industry and the lecture programme with on-demand recordings. The ICCX digital 365. went live again on 15 and 16 June 2021. More than 650 participants from the concrete and precast concrete industry, from the emerging 3D construction printing sector and the autoclaved aerated concrete industry came together on the digital platform to inform and exchange ideas. In this way, experts from over 70 countries around the world networked in a simple and effective way.

لقد كانت منصة ICCX digital 365. مفتوحة دومًا للزوار منذ شهر مارس وتتيح الوصول من أي مكان في العالم إلى المعلومات التقنية الواردة من الموردين العارضين والشركات المصنعة من قطاع صناعة الخرسانة والخرسانة الجاهزة وبرنامج المحاضرات مع إمكانية التسجيل عند الطلب. وستعود المنصة للعمل مرة أخرى في 15 و 16 يونيو 2021. واجتمع ما يزيد عن 650 مشاركًا من قطاع صناعة الخرسانة والخرسانة الجاهزة، وقطاع الطباعة الإنشائية ثلاثية الأبعاد وقطاع صناعة الخرسانة المعقمة المشبعة بالهواء على المنصة الرقمية لتبادل المعلومات والأفكار. وبهذه الطريقة، يتواصل خبراء من أكثر من 70 دولة حول العالم بطريقة بسيطة وفعالة.

The extended conference programme now also included the topics of 3D construction printing (especially 3D concrete and formwork printing) and autoclaved aerated concrete. By adding these two subject areas also within the framework of

the exhibition, the organisers on the one hand did justice to the feedback from the visitors of the first hour and thus coupled the specialist areas of the ad-media publishing house with their own event concept.

2050 concrete in the low carbon built environment roadmap

Our roadmap will:

- Set out the actions we have to take now, and in the future, with measurable milestones, to reach the desired destination.
- Building on existing comprehensive technology roadmaps produced for the cement sector, our roadmap will set out a clear pathway for concrete.
- Take a circular economy approach by taking into account for example emissions reduction in cement and concrete production, savings delivered by concrete during its lifetime, reduced demand through promoting design, material and construction efficiencies and improved standards, reuse of whole concrete structures, design for disassembly and reuse of elements, and accounting for the CO₂ savings at the end of life including concrete recycling and enhanced recarbonation.
- Be the essential reference document for the sector, used by third parties, companies, partners, affiliates and the ICCA in supporting our pathway to delivering society with carbon neutral concrete by 2050 in order to meet the global climate challenge.

EUROPEAN AUTOCLAVED AERATED CONCRETE ASSOCIATION

EAACA promotes the interests of producers of autoclaved aerated concrete (AAC) and their national associations across all of Europe.

Founded in 1988

Members from 19 countries

Operating more than 100 production sites

Producing around 16 million m³ of AAC per year

Enough to build about 350,000 homes.

ACCELERATED PRECAST CONSTRUCTION

Trygve Hoff, PE
Northeast Region Engineer
American Concrete Pipe Association
thoff@concretepipe.org

TAM

The lectures attracted visitors from all over the world to the event. The speakers offered a wide range of knowledge from architecture to manufacturing and ecological aspects as well as innovations in concrete production.

Statements about ICCX digital 365.

“ We at Kappema would like to thank you once again very much for the incredibly good organization of ICCX digital 365. Already from the beginning we had a very good feeling with this kind of online exhibition. And this has been confirmed. Not only do the platform and the booths seem almost natural, but the possibilities to get in touch with customers through chat or video conferencing are exactly the right way for future events like this. The restrictions on travel in particular have made customer contacts very difficult. We realized very quickly that you can actually be represented much better via ICCX digital 365 than at any other trade show. We have the whole world as guests without even having to travel. This saves time and money. Of course, there is no substitute for personal contact, but it can always be arranged to meet the needs of individual customers at a later date. We wish you to continue to build on this success and hopefully reach even more visitors or exhibitors on this platform.

Jürgen Bauer
Kappema
Germany

“ I attended the Live Days of the ICCX digital 365. virtual conference. The organizers did a fantastic job, it was great to engage with so many professionals from the AAC and precast industry. I am looking forward to more insightful discussions and hearing from a host of great speakers again at the next Live Days in September.

Faris Alwan
Exeed Building Materials Industries
UAE

“ With ICCX's platform the world got even smaller. The easiness to connect with other business is now on the tip of our fingers. Great job!

Rodrigo Prah
Baunovo
Guatemala/USA

“ I am pleased to be able to participate in the conference & exhibition. Given the limited direct contacts, it is nice to be able to participate in a video chat with individual exhibitors and to be able to establish possible cooperation. Another advantage is the access to the presentations also after the conference.

Anna Głębocka
Stowarzyszenie Producentów Betonów
Poland

“ I have found the ICCX conference very interesting. In particular the sessions regarding 3D concrete printing, which have been very informative.

Peter Kennedy
Hyperware Consulting
Australia

“ Thank you for giving me the opportunity to be the part of this great online exhibition and it was a wonderful experience. Being a precast professional I appreciate ICCX for arranging such events in this tough times of Covid19 when in-person interaction or exhibitions are not possible and reach out to the concrete and precast industry virtually.

Azhar Peerzda
Eastern Precast Concrete
Saudi Arabia

“ ICCX digital 365. brings exhibitions into a new dimension. The traditional, physical exhibition stands are virtual and it is possible to interact with stand personnel. The ICCX digital 365. event is easy to access and operate in the platform, to chat or take a video call with your preferred suppliers. The concept also offers loads of interesting presentations both in the official conference program as well as at the individual booths. It is a good way to connect with stakeholders in the industry. The more people will be there, the better the event will be - we recommend participating!

Nina Lehtonen & Curt Lindroth
Elematic
Finland

“ The idea of holding an event like “ICCX digital 365.” is highly topical. The event is a rare opportunity to learn about new products and get in direct contact with manufacturers from all over the world, from any location wherever you are.

Vladimir Sukhman
Reinforced Concrete Institute
Russia

“ ICCX digital 365. is not just any other construction event. It's helping in modernising the outdated construction industry.

Abhishek Kumar Devjibhai
Ekotekt
Estonia

“ Our over 6 decade facilities are located in the center of the United States of America and sometimes it is good to look at what others are doing so you do not become stagnate. The opportunity from my office to see what others are doing with operations, formwork, and even where 3d printing is going was more than worth my minor effort.

Keith Wallis Jr.
Prestressed Casting Co.
USA

“ ICCX digital 365. is so impressive and valuable that I have shared new information with my friends in China first time. From this window, we can touch the new trends of industry and find potential partners in the future. Thank you again for providing the great channel to communicate at this special period.

Yang Shen
Wuhan Sanyuan
Special Building Materials Co., Ltd.
China



The trade exhibition featured over 70 international companies from the concrete and precast industry, the emerging 3D construction printing sector and the aerated concrete industry. There was and is something for every visitor here.

Over two days, four lecture sessions were offered on the topics described above and, in addition, numerous webinars from exhibitors, which visitors could choose from. You can't get more specialised information in one place!

The exhibition of the supplier industry has grown since the launch of the event, which means that there are now over 70 exhibitors at the ICCX digital 365. The opportunity to exchange ideas with the individual companies in 1:1 or group chats is unique for this industry, because the organisers attached great importance to the possibility of networking from the very beginning. After all, that is what a face-to-face event has always been about.

Visit the ICCX digital 365. today and watch the recordings of the lectures incl. Q&A sessions in bonus time mode at any time. You can also download information material from all the exhibition booths and contact the companies via text messages.

But make a note now of the date of the next Live Day, which will take place on 15/09/2021. It will be worth it!

FURTHER INFORMATION



Organisation



www.iccx.org

Sponsors



Supporters



Newsletter registration:
www.cpi-worldwide.com/newsletter

ICCX digital 365.:
www.iccx.org/digital-365

3.-4. November 2021

ICCX Western Europe – digital precast building concepts



مؤتمر ICCX Western Europe - مفاهيم البناء الرقمي بالخرسانة الجاهزة

"Digital precast building concepts" are the focus of ICCX Western Europe on 3 and 4 November this year in Bonn. The tried and tested combination of conference and exhibition brings together industry experts from concrete plants, the supplier industry, science and associations. Developments and trends in the fields of concrete technology, structural precast elements, pipes and manholes as well as concrete products will be discussed.

إن "مفاهيم البناء الرقمي بالخرسانة الجاهزة" هي محط التركيز في مؤتمر ICCX Western Europe الذي سيعقد يومي 3 و 4 نوفمبر من هذا العام في مدينة بون. وتجمع مجموعة المؤتمرات والمعارض المجربة والمختبرة بين خبراء الصناعة من مصانع الخرسانة وقطاع الموردين ومن مختلف العلوم والجمعيات. وستجري مناقشة التطورات والاتجاهات في مجالات تكنولوجيا الخرسانة والعناصر الهيكلية الجاهزة والأنابيب وفتحات المجاري والمنتجات الخرسانية كذلك.

"Prefabrication – The future for builders, project developers, planners, architects and entrepreneurs" – with his keynote speech, Christoph Gröner gives the right impetus right at the beginning for the ICCX Western Europe, which will take place on 3 and 4 November in the Maritim Hotel in the German city of Bonn. The leading German entrepreneur is actively implementing his vision – a precast concrete plant based on Christoph Gröner's basic ideas of prefabrication started operations near the city of Erfurt in January 2021. Directly after the keynote speech, a panel discussion on the lecture topic is planned with leading experts from the industry.

The event will continue on 3 and 4 November with the lecture sessions "Digital Building Tomorrow", "Concrete and Precast Technology", "BIM and Concrete Products", "Ecology and Economy" and "Markets Today and Tomorrow". All speakers are proven experts from science and practice (see programme).

Intensive exchange of ideas and information

At the accompanying exhibition of the ICCX Western Europe around 80 supplier companies will present their products and services for the concrete and precast concrete industry.



Example of fast and high-quality construction with precast concrete elements at the event location Bonn – the "Neuer Kanzlerplatz" district



Christoph Gröner, managing partner of Gröner Group GmbH and CEO of CG Elementum AG (CEO), gives an insight into his vision of the prefabrication of the future as a keynote speaker.

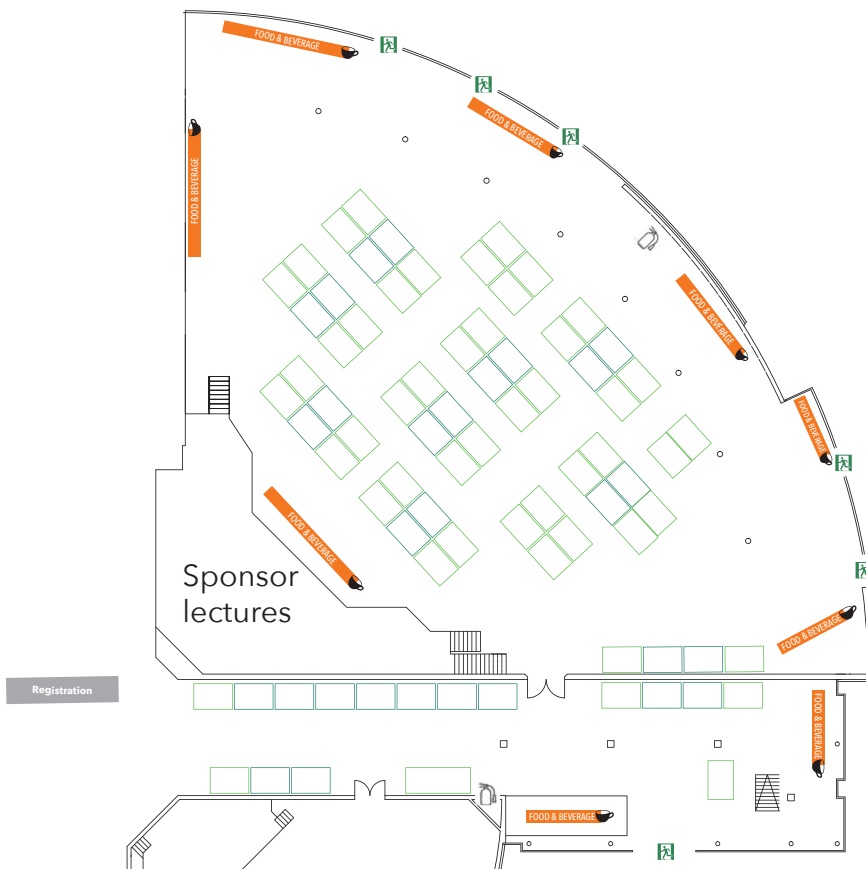
World leading manufacturers of machinery and equipment, moulds and formwork, concrete admixtures and materials as well as of other supplier products will be represented. Last free booth spaces can be booked directly via the event website www.iccx.org.

With this combination of trade conference and exhibition, which has been successfully tested many times around the world, ICCX Western Europe brings together all representatives of the industry – from manufacturers of precast concrete elements to suppliers, researchers, developers and to clients. It offers all participants the ideal platform to exchange information and ideas and to get to know the latest state of the art in products, machinery and plant technology as well as application-oriented concrete technology.

ICCX Western Europe is supported by sponsors Ecoratio, WiSolar, iTheses, Kobra, Sika, BT innovation, Aalborg Portland and Pemat. Partners also include IAB Weimar, Cerib, Febe and Betonhuis.

ICCX Western Europe meets ICCX digital: Hybrid Day on Nov 4, 2021!

Following the concept of "digital building concepts" the organizers will integrate on the second day of the event in



Exhibition plan and list of exhibitors

Status as per 30th July 2021





Company	Country	Internet	Company	Country	Internet
A.W.M. SpA	Italy	www.awm.it	Namtas Concrete Block Machines	Turkey	www.namtas.com
Aalborg Portland A/S	Germany	www.aalborgportland.com	OGS	Germany	www.ogs.de
Afinitas / BFS	Germany	www.afinitas.com	OMAG Service GmbH	Germany	www.omag.de
AMCS Group	Germany	www.amcsrouting.com	OXO H2O Solutions / Oxocrete	Canada	oxoh2o.com
apilion	Germany	www.apilion.de	Peikko Group	Finland	www.peikko.de
ASSYX	Germany	www.assyx.com	Pemat	Germany	www.pemat.de
Avermann Betonfertigteiletechni	Germany	www.avermann.de	Penta	Italy	www.penta-automazioni.it
B+S Engineering	Germany	www.bs-eng.de	PERI AG	Germany	www.peri.com/pave
B.T. innovation GmbH	Germany	www.bt-innovation.de	Polarmatic	Finland	www.polarmatic.com
BEKAERT	Italy	www.bekaert.com	Polblat	Poland	www.polblat.de
BETA Maschinenbau	Germany	www.beta-mb.de	Prilhofer Consulting GmbH & Co. KG	Germany	www.prilhofer.com
BRECON Vibrationstechnik GmbH	Germany	www.brecon.de	PROGRESS GROUP	Germany	www.progress-group.info
Calenberg Ingenieure GmbH	Germany	www.calenberg-ingenieure.de	Putzmeister	Germany	www.putzmeister.com
CONSTRUX	Belgium	www.construx.eu	QUADRA	France	www.quadra-concrete.com
Contex Hartmetall Verschleißte	Germany	www.contex-gmbh.de	RATEC	Germany	www.ratec.org
CureTec	Germany	www.curetec.de	RECKLI GmbH	Germany	www.reckli.com/de
Ecoratio	Germany	www.ecoratio.com	Rekers GmbH	Germany	www.rekers.de
EIRICH	Germany	www.eirich.de	REMEI BPB BETRA	Germany	www.remei.de
Friedr. ISCHEBECK	Germany	www.ischebeck.de	Rhein-Chemotechnik GmbH	Germany	www.rhein-chemotechnik.com
FRIMA GmbH & Co. KG	Germany	www.frima-emen.de	RIB SAA Software Engineering	Austria	www.rib-saa.com
Ha-Be Betonchemie	Germany	www.ha-be.com	ROTHO	Germany	www.rotho.de
Haarup Maskinfabrik A/S	Denmark	www.haarup.dk	SAMJUNG	South Korea	www.samjungltd.com
HOWAL GMBH	Germany	www.howal.com	SIGNODE	Germany	www.signode.com
Hydronix Ltd	United Kingdom	www.hydronix.com	Sika Deutschland GmbH	Germany	www.sika.de
i-Theses	Belgium	www.i-theses.com	SIMEM Deutschland	Germany	www.simem.com
IAB Weimar / CERIB	Germany	www.iab-weimar.de	TECHMATIK S.A.	Poland	www.techmatik.pl
Innogration GmbH	Germany	www.innogration.de	Tecwill	Finland	www.tecwill.com
Inter-Minerals	Germany	www.interminerals.com	TEKA Maschinenbau GmbH	Germany	www.teka.de
Kappema GmbH	Germany	www.kappema.com	Thomas Eisenhandel GmbH	Germany	www.thomas-eisen.de
KEIMFARBEN GmbH	Germany	www.keim.com	Top Mineral GmbH	Germany	www.topmineral.com
KOBRA	Germany	www.kobragroup.com	Unitechnik Systems GmbH	Germany	unitechnik.com
Kraft Curing Systems	Germany	www.kraftcuring.com	Venator	United Kingdom	www.venatorcorp.com
Liebherr-Mischtechnik GmbH	Germany	www.liebherr.com	Vollert	Germany	www.vollert.de
MAX-truder	Germany	www.maxtruder.de	WASA AG	Germany	www.wasa-technologies.com
mbk	Germany	www.mbk-kisslegg.de	Weckenmann	Germany	www.weckenmann.com
MCT ITALY SRL	Italy	www.marcontonini.com	Wi Solar GmbH	Germany	www.wi-solar.de
myWood	Slovakia	www.mywood.de	Zenith	Germany	www.zenith.de

3rd November 2021 / Opening Session

09:30	Christoph Gröner	Germany		Prefabrication - the future for builders, project developers, planners, architects and entrepreneurs
-------	------------------	---------	---	--

Sponsored presentations during the break in the exhibition area: **iTheses**

3rd November 2021 / Digital Building Tomorrow

12:30	Prof. Peter Mark & Dr. Patrick Forman	Germany		Fast construction with adaptive modular prefabrication
	Prof. Michael Eisfeld	Germany		Advantages and fields of application of BIM models in the production of precast elements
	Benno Strack	Germany		Model-based data exchange with IFC4precast - Status Quo
	Thomas Friedrich	Germany		Digitalisation of the production process





Sponsored presentations during the break in the exhibition area: **ecoratio**  **WI SOLAR** 

3rd November 2021 / Concrete and Precast Technology

15:30	Prof. Ludger Lohaus & Tobias Schack	Germany		Living architectural concrete with planned colour tone deviations
	Prof. Jürgen Oecknick & Michael Erhardt	Switzerland Germany	 	Decorative precast concrete facades - the way from the material concept to the final solution
	Prof. Marc Sanabra	Spain		Digitally Customized Hollow Core Slabs: Reducing Material Consumption and Increasing Margins

ICCX evening event begins 19:00 with music band PRIME

4th November 2021 / BIM & Concrete Products

09:30	Henning Kortmann	Germany		Digital detection and sorting of faulty concrete products
	Dr. Justus Lipowsky	Germany		Automated masonry construction with robots
	Dr. Kais Mehiri	France		Smart board to enhance concrete block machines - new way for board characterization
	Dr. Gareth Robinson	UK		BIM automation for box culvert and tank production

Sponsored presentations during the break in the exhibition area: **KOBRA**  **BUILDING TRUST** 

4th November 2021 / Ecology & Economy

12:30	Thomas Friedrich	Germany		Future-oriented project InnoLiving - economically and ecologically optimised building
	Youssef Nait Boubker	Belgium		The Möbius Tower - best practice from Belgium - BIM planing & BREEAM certification
	Prof. Harald Kloft	Germany		Additive Manufacturing as an opportunity for resource-efficient components in precast concrete construction

4th November 2021 / Markets Today and Tomorrow

15:00	Andreas Kreuzer	Austria		Market analysis concrete block pavement: Demand - customer groups - areas of application
	Peter Vahrenhorst	Germany		The dangers of digitization in concrete plants and how to strategize protective measures

Bonn also ICCX digital 365.! On this day – the “Hybrid day” – the presentations from Bonn will be simultaneously be broadcasted in the ICCX digital 365. conference program. In Bonn will be terminals where attendees can visit many more exhibitors digitally, and the exhibitors in Bonn who are also virtually present can welcome their digital guests live on their booth in Bonn. The Hybrid Day will enlarge the physical and digital event feeling and will mark the next step of the development of digital/hybrid events for the concrete industry.

Special admission price for CPI subscribers

Subscribers to CPI Worldwide, the leading international trade journal for the concrete and precast concrete industry, are once again at an advantage at ICCX Western Europe: they can purchase their participation ticket at an extra low preferential price via the event website (www.iccx.org). If you are not yet a regular reader of CPI worldwide – just do the math: a subscription is certainly worthwhile for you, too.

FURTHER INFORMATION



www.iccx.org

Platinum Sponsor



Silver Sponsors



Mobility Partners



www.cpi-worldwide.com

Organisation



Gold Sponsors

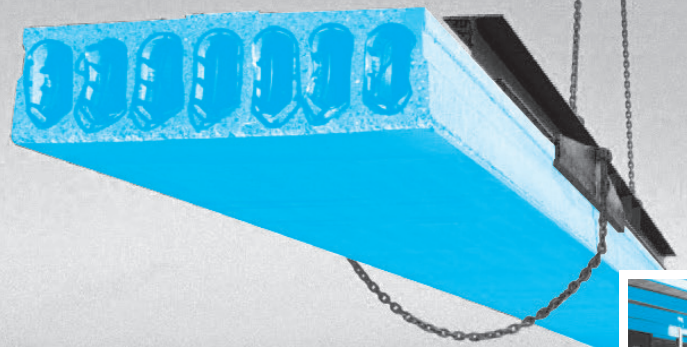


Partners



CPI – Concrete Plant International – 2 | 2021

Pure flexibility.



Production of hollow core slabs

PAUL supplies

- Prestressing installations incl. planning work
- Anchor grips
- Prestressing machinery (single-/multi-stressing jacks)
- Strand pushing and cutting equipment
- Automatic prestressing machines for railway sleepers
- Prestressing equipment for bridge construction (prestressing cables and stay cables)

The experts in
Prestressed Concrete Technology.
stressing.paul.eu

Paul at YouTube



stressing-channel.paul.eu

Max-Paul-Str. 1
88525 Dürmentingen
Germany
☎ +49 (0) 73 71/500-0
☎ +49 (0) 73 71/500-111
✉ stressing@paul.eu

Besser Company, Alpena, Michigan 49707, USA

Kevin Curtis Retires, Besser Company Names Ryan Suszek CEO & President



تقاعد كيفين كيرتس، وتعيين شركة Besser لريان سوسيك في منصب الرئيس والمدير التنفيذي

Besser Company's CEO, Kevin Curtis, retired from the Company after 43 years of service. Kevin will still proudly represent Besser as an external member of the Besser Board of Directors, while simultaneously handing over his CEO title to Ryan Suszek.

لقد تقاعد، كيفين كيرتس، المدير التنفيذي لشركة Besser من الشركة بعد 43 عامًا من الخدمة. سيظل كيفين يمثل شركة Besser بفخر كعضو خارجي في مجلس إدارتها، بينما سيتسلم ريان سوسيك مهام منصبه كرئيس تنفيذي جديد للشركة.



Kevin Curtis, retired from Besser after 43 years of service.



Ryan Suszek's appointment as CEO and President marks a tremendous achievement for himself and for Besser.

"I'd like to thank Ryan and the Board members for their time and patience as we evaluated and reevaluated our succession plans. No one prepares you for just how difficult it is to entrust a 117-year-old business that has been a piece of your heart for 43 years. I was fortunate enough to have found someone who closely matches my passion for Besser as a whole - the industry, the customers, and unquestionably the employees."

Ryan Suszek's appointment as CEO and President marks a tremendous achievement for himself and for Besser. Ryan is following in the footsteps of some of the most distinguished and well-respected leaders in the concrete products industry.

Ryan's previous roles at Besser have provided him with valuable leadership experience and a comprehensive knowledge of the concrete products industry. In keeping with Besser tradition, Ryan has grown within the Company in complete grassroots, hands-on approach. From the shop floor to global tradeshows, he has worked closely with nearly every department and function over his sixteen-year career with Besser, as well as customers throughout the world, to establish a complete understanding of the Company's business and industry. Ryan is surrounded by an excellent management team in all areas of Besser Company, who are all committed to continu-

ing the Company's legacy of providing outstanding customer service and supreme innovation and quality. "The concrete products industry provides countless opportunities for collaboration and growth. It's an honor to lead the team as we drive Besser Company forward towards the next 117 years," commented Ryan.

Ryan, his wife Melodi, and their son Boe reside in the Alpena area and, together, look forward to an exciting future at Besser. ■

FURTHER INFORMATION



Besser Company
801 Johnson Street
Alpena, Michigan 49707, USA
T +1 989 3544111
sales@besser.com
www.besser.com

Paul Maschinenfabrik GmbH & Co. KG, 88525 Dürmentingen, Germany

Paul sets the course for the future

بول يحدد مسار المستقبل

Since the unexpected death of Werner Paul in February last year, Barbara Hering has been managing the business of Paul Maschinenfabrik. Now she is receiving support from the next generation. Since the turn of the year, Alexander and Maximilian Paul have been at her side. Both have been with the company for many years and are industry experts with extensive experience and knowledge.

تدير باربرا هيرينج أعمال شركة Paul Maschinenfabrik منذ وفاة وبرنر بول المفاجئة في فبراير من العام الماضي. وتحصل الآن على الدعم من الجيل القادم. ومنذ مطلع العام، حظت بدعم وتأييد كل من إلكسندر وماكسيميليان بول. ويعمل كلاهما مع الشركة لسنوات عديدة وهما خبراء في قطاع الصناعة نظرًا لتمتعهما بخبرة ومعرفة واسعة.



The new management trio at Paul Maschinenfabrik in Dürmentingen: Barbara Hering, Alexander Paul und Maximilian Paul

This means that Paul Maschinenfabrik will remain a Swabian family business in the future. All three are united by the goal of doing good and solid business, creating and maintaining secure jobs with a good and productive atmosphere, and developing and offering machines at world market level.

While Barbara Hering manages the business of the pre-stressed concrete division, the two newcomers are jointly responsible for the circular sawing technology division, with Alexander Paul's focus being on technology and Maximilian Paul's on sales. Under the leadership of this strong trio, Paul is looking to the future with confidence. ■

FURTHER INFORMATION



Paul Maschinenfabrik GmbH & Co. KG
Max-Paul-Str. 1
88525 Dürmentingen, Germany
T +49 7371 5000, F +49 7371 500111
stressing@paul.eu, stressing.paul.eu



ICCX WESTERN EUROPE MEETS

ICCX DIGITAL 365.

4.11.2021

www.iccx.org

Leading the worldwide sales and operations teams

Afinitas promotes Daniel Bühler to Global Division President



شركة Afinitas تقوم بترقية دانيال بوهرلر لمنصب الرئيس العام للقسم

Afinitas is pleased to announce that Daniel Bühler will be assuming the position of Global President of the Afinitas Equipment & Automation Division later this year. In this role, Bühler will be responsible for the HawkeyePedershaab and BFS product lines; overseeing all global sales, service and operations teams.

يسر شركة Afinitas أن تعلن عن تولي دانيال بوهرلر منصب الرئيس العام لقسم المعدات وعمليات التشغيل الآلي في Afinitas لاحقًا من هذا العام. وفي هذا الدور، سيتحمل بوهرلر المسؤولية عن خطوط إنتاج HawkeyePedershaab وBFS؛ والإشراف على جميع فرق المبيعات والخدمات والعمليات العالمية.



Daniel Bühler

turnkey steel plants, and was later tapped to help build a division for its Udine company in Italy. In addition, he also had a five-year stint in the automotive industry as a sales director. A native of Switzerland, Bühler speaks three languages and has a degree in mechanical engineering. He currently resides in Udine, Italy, with his wife Barbara and two children, but will be moving to the U.S. later this year. Bühler is an active cyclist and member of the Bastioni Bike Team in Italy.

"Throughout my time at BFS and now at Afinitas I have enjoyed working in an industry with so many talented people," Bühler said. "This new opportunity allows me to interact regularly with our team members throughout the world to help develop new technologies and bring even more value to our customers and the precast concrete industry." ■

"With Daniel, we have an internationally experienced and highly recognized industry leader in this key role," said Brad Schmidgall, Afinitas CEO, who until Bühler's appointment, will continue to lead the Equipment Division in The Americas. "He knows our company extremely well, is passionate about our customers and industry and has done excellent work transforming sales and operations in Europe. We are certain Daniel will further strengthen our global success."

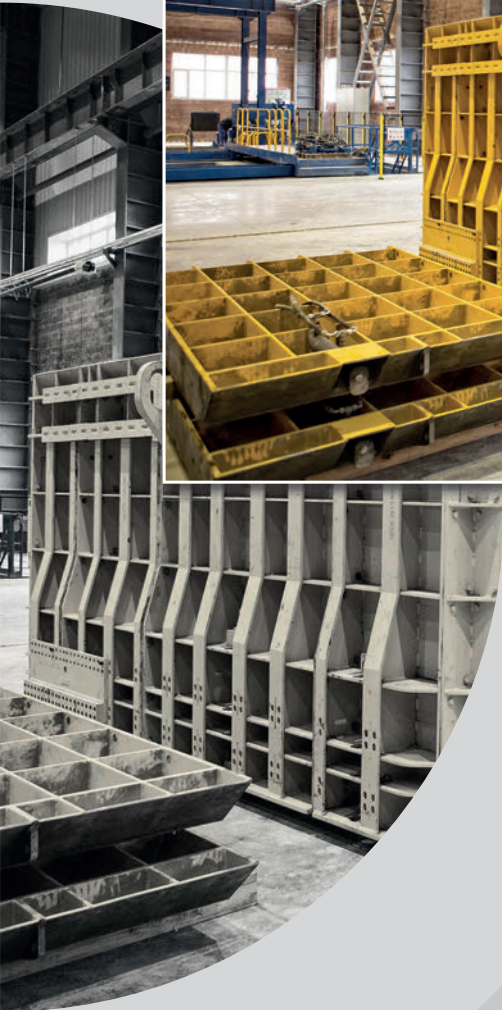
Bühler, who most recently served as European President of the Afinitas Equipment & Automation Division, brings nearly 20 years of experience in the infrastructure industry. For more than a decade he was a Managing Director, first at Casagrande company Huette and then, along with Klaus Müller, at BFS GmbH based in Blaubeuren, Germany, which became part of Afinitas in 2017. Bühler also worked in the steel industry for Concast in Switzerland, where he supplied

FURTHER INFORMATION



Afinitas
8040 Forsyth Blvd
Clayton, MO 63105, USA
T +1 314 862 8000
info@afinitas.com
www.afinitas.com

HawkeyePedershaab and BFS offer a wide range of solutions for the production of concrete box culverts



The box culvert solutions are built around our modular mold equipment. With just one set of modular mold components the concrete producers are able to produce all box culvert sizes from small to large sizes.

The modular mold equipment can be used in different plant configurations - either in a machine solution or also in an egg-lay solution. In either way the benefits with our box culvert system compared to traditional wetcast production are:

- Capability of making all box sizes with just one set of mold components
- Mold components are pegged and machined to facilitate precise assembly
- Strong design which is able to withstand vibration forces, stripping forces and dead-weight stresses - without flexing or sagging
- Higher productivity with less labor

This is your guarantee for long-lasting equipment, lower manufacturing costs and higher quality products.

BFS Betonfertigteilesysteme
Dr.-Georg-Spohn-Str. 31
89143 Blaubeuren, Germany
www.hp-bfs.de

HawkeyePedershaab
Saltumvej 25
9700 Brønderslev, Denmark
www.hpct.com



The Afinitas family of brands



Energy-efficient cooling and heating solution for enhancing concrete quality under demanding conditions

حل التبريد والتدفئة الموفر للطاقة لتحسين جودة الخرسانة في ظل الظروف الصارمة

■ Michael Walleter, KTI-Plersch Kältetechnik GmbH, Germany

When constructing airports, dams, tunnels, bridges and other infrastructure projects, solid concrete elements are employed that can still develop hydration heat due to their thickness and thus crack-forming stresses months after their installation. This is compounded in regions with extreme climates by very high or low ambient temperatures, which can hinder the controlled curing of concrete. The temperature of concrete must be appropriately regulated right from the mixing process in order to avoid cracks in the concrete and thus also drastic damage to a structure. Construction companies and concrete manufacturers are often confronted with tight temperature limits due to the stricter legal requirements of the last 10 to 15 years, as well as greater demands on concrete quality and structure. At the same time, rising energy prices demand that the equipment utilised for temperature control become increasingly more energy efficient. One solution in such cases can be modular systems which make it possible to meet stringent concrete temperature requirements through the combined use of ice, water and air, and that additionally exhibit a more beneficial energy and CO₂ footprint by avoiding consumption-intensive cooling and heating methods.

عند إنشاء المطارات والسدود والأنفاق والجسور ومشاريع البنية التحتية الأخرى، تُستخدم عناصر خرسانية صلبة يظل بالإمكان تعديل درجة حرارتها تمهيداً نظراً لسمكها وبالتالي ضغوط تشكيل الشقوق بعد أشهر من تركيبها. وتزداد صعوبة ذلك الأمر في المناطق ذات المناخات القاسية بسبب درجات الحرارة المحيطة العالية أو المنخفضة للغاية، والتي يمكن أن تُعيق المعالجة المُتحكم بها للخرسانة. وعليه، يجب تنظيم درجة حرارة الخرسانة بشكل مناسب من عملية الخلط لتجنب حدوث تشققات في الخرسانة وبالتالي حدوث أضرار جسيمة للقوام أيضاً. وغالباً ما تواجه شركات الإنشاءات والشركات المصنعة للخرسانة حدوداً صارمة لدرجة الحرارة نظراً للمتطلبات القانونية الأكثر صرامة خلال السنوات العشر إلى الخمس عشرة الماضية، فضلاً عن المتطلبات المتزايدة بخصوص جودة الخرسانة وقوامها. وفي نفس الوقت، يتطلب ارتفاع أسعار الطاقة أن تصبح المعدات المستخدمة للتحكم في درجة الحرارة أكثر كفاءة في استخدام الطاقة بشكل متزايد. وتمثل الأنظمة المعيارية، أحد الحلول المناسبة في مثل هذه الحالات، نظراً لأنها تتيح تلبية متطلبات درجة الحرارة الصارمة للخرسانة وذلك من خلال الجمع بين استخدام الثلج والماء والهواء، وهو ما يوفر أيضاً طاقة أكثر فائدة ويقلل من انبعاثات CO₂ "ثاني أكسيد الكربون" من خلال تجنب طرق التبريد والتدفئة كثيفة الاستهلاك.

"Every house is built by man," says a well-known proverb. Nevertheless, one thing in particular - concrete - is needed for sound structures in mega-projects such as the Dubai International Airport, which now covers an area of 1,400 hectares. Yet in the past, poor planning and lack of expertise have often led to problems occurring at a later date with the strength of installed concrete because its temperature was not sufficiently controlled. Cracks caused by hydration due to temperature differences within construction elements during curing have to be subsequently processed and may cause dangerous weak points in a structure, i. e. potential failure points. A comprehensive reduction in concrete temperature during mixing is still required especially in climatically challenging regions such as the Middle East, Southeast Asia or Africa, where extreme temperatures can prevail. Even in cold or changeable regions, concrete has to be temperature-controlled and, in this case, heated. Otherwise, a batch that is too cold can freeze and thus lead to structural damage in a construction element.



Concrete cooling systems made by KTI-Plersch Kältetechnik GmbH for generating a total of 2.6 million m³ of cooled concrete. These were employed in the construction of Dubai International Airport

On top of all this, requirements for handling concrete on construction sites have become more rigorous in recent decades. Legislation in many countries has placed greater demands on the strength, resistance and durability of concrete, which is also reflected in the limit values specified for the temperature of concrete. Both public and private bodies often additionally specify even more stringent temperature limits to avoid subsequent problems with concrete quality. This applies, for example, to countries of the Arabian Peninsula who, depending on project, demand just 25° C or less instead of the legally required 30° C - and that with outside temperatures of up to 50° C in summer! New types of high-performance cements are often employed that develop significantly higher temperatures during curing than standard cements. The issue of energy efficiency, which has come about through escalating electricity prices and dwindling oil supplies, also poses a new challenge. Systems are needed that can both influence temperature significantly as well as present alternatives to energy-intensive methods, such as the use of nitrogen. Last but not least, the prevailing lack of space, especially in urban areas, is also an increasingly important factor. Systems for concrete cooling and heating should be kept as compact as possible so that functioning concrete temperature control systems can be implemented even on small construction sites.

Concrete cooling with ice - plate ice as an energy-efficient option

Possible solutions for controlling the temperature of concrete can vary greatly depending on climatic conditions and specific construction project. To take but one example, a tunnel is to be built in a moderate climate in central Europe. Due to statutory regulations, the concrete must be particularly impermeable to seepage water and prevent moisture from penetrating and causing long-term damage ("white tank concrete"). The formation of cracks due to hydration must therefore be avoided at all costs. Yet, it does mean increased

requirements for the concrete mix temperature. A maximum of 20 °C is allowed for the construction material being installed. Despite the mild climate, this necessitates the use of efficient cooling equipment, especially in summer. More than 50 tons of ice per day are needed for pre-cooling in order not to exceed this limit and at the same time enable the provision of sufficient concrete. As the contracting party attached great importance to energy efficiency in this project, the choice fell to producing plate ice energy-efficiently, instead of flake ice.



Plate ice (top) and flake ice (bottom), as classic types of ice for concrete cooling. Plate ice can be produced approx. 30 - 45 per cent more energy-efficiently

CPI CONCRETE PLANT INTERNATIONAL

Our free eService:



CPI newsletter

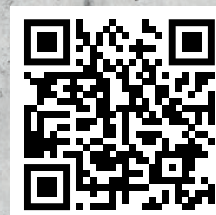


ICCX newsletter

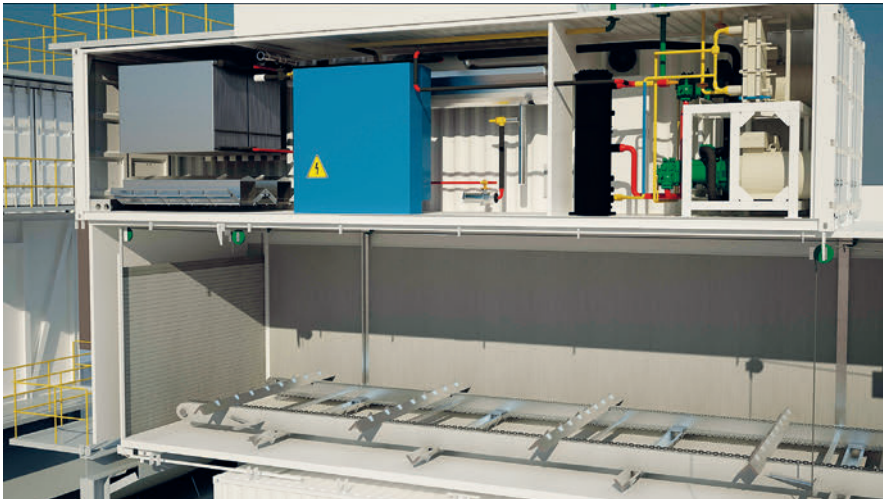
Interested?

Register here:

www.cpi-worldwide.com/registration



www.cpi-worldwide.com



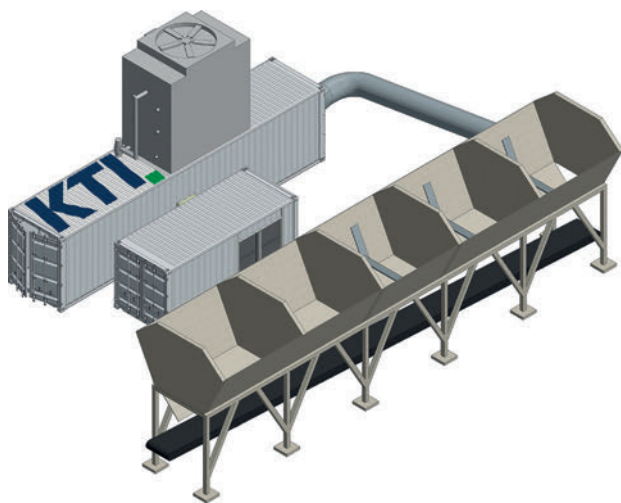
Cross-section through a KTI-Plersch Kältetechnik GmbH plate ice unit positioned on an automatic ice storage system

Depending on ambient conditions, plate ice machines are more economical – consuming around 30-45 % less energy per tonne of ice – than comparable flake ice machines.

Aggregate cooling by air as an alternative to ice

In tropical regions, on the other hand, there are additional challenges when temperatures can reach 45° C or more. To take another example, 1,000 m³ concrete, for use in the foundations of all kinds of large building structures, are to be produced daily in a ready-mixed concrete production facility. Here, it would have been possible, as in Europe, to resort to the use of plate ice in order to achieve the regionally specified target temperature of 23.5° C, and cold water could also be produced at the same time if desired. However, in this case, a fresh concrete temperature of only 28° C would have been attained even with the use of over 78 kg of ice and 36

litres of cold water per cubic metre of concrete. It was not possible due to the water-cement ratio; the concrete strength would no longer have been guaranteed. As a consequence, aggregate cooling has now been employed as a supplement to ice and cold water. The gravel needed for mixing the concrete is cooled down in appropriately sized silos before the mixing process with the help of cold air blown in through nozzles. In this process, outside air is drawn in and cleaned so that the heat exchangers do not become clogged and constant cooling capacity can be guaranteed. It means that the system's mechanical maintenance can be reduced significantly. The air finally reaches the gravel via a multi-stage cooling system that lowers the temperature of the aggregates to around 20 °C in this example case with heat exchanger packages from below inside the silo. In other cases, aggregate cooling also serves as a complete alternative to cooling with ice. The result is that, as regards energy, the combination of cooled gravel and cold water remains appreciably below the variant with ice, since cooling down both water and air is less energy-intensive than producing ice. Given the composition of concrete (40 to 60 per cent gravel), the cooling of aggregates also has a substantial effect on the mixing temperature, thus making it very effective. Generally speaking, a change in the aggregate temperature of approx. 1.6 K. causes a change in the fresh concrete temperature of 1 K. By way of contrast, the added water must be cooled by 3.6 K to achieve the same cooling effect.



Model of a system for aggregate cooling. This is connected via a cold air line to a linear batching unit, in which the air nozzles are permanently installed. The same nozzles and pipes can be used with KTI-Plersch Kältetechnik hot air systems. This generates savings on space and costs

Dam construction as the supreme discipline

Finally, a third and last example will illustrate one of the biggest challenges in concrete cooling and heating – dam construction. This time the scene is set in a region far in the south of the American continent, where both low temperatures in winter and higher temperatures in summer occur. Characteristic for every dam project are the complex requirements for temperature-controlled concrete that arise primarily from its massive concrete element dimensions. There is practically no more heat exchange during curing between the core and the environment from a certain distance between component core and surface. As a result, heat and volume development



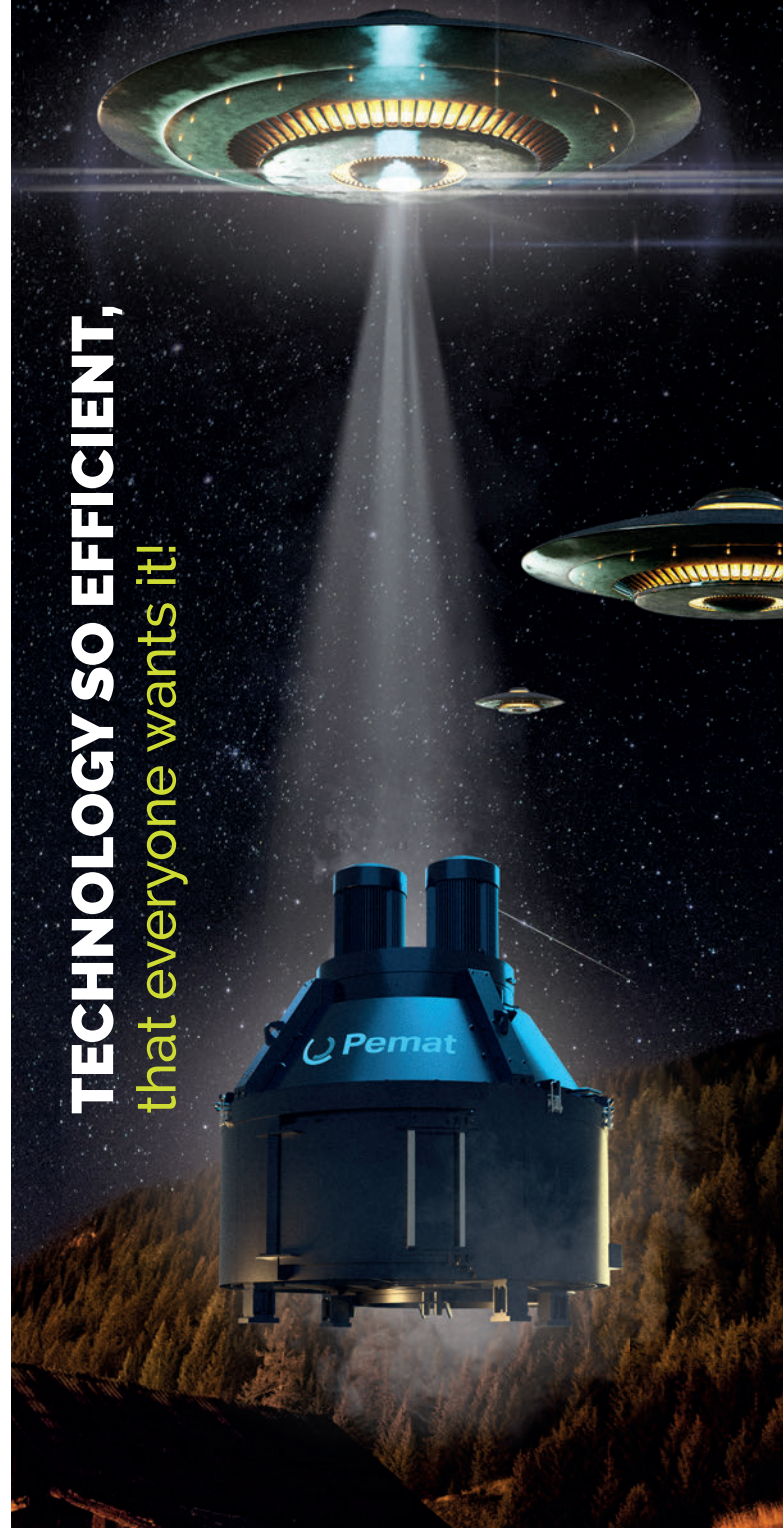
A KTI plate ice unit with integrated cold water production on an ice storage unit and containerised water tank (right) plus a KTI-Sauter hot water unit (left) provide the concrete mixing system with cooling and heating media respectively for producing fresh concrete at a temperature of 10° C all the year round

also increases in the interior due to hydration, which negatively affects the structure - perhaps not attaining the desired compressive strength or increased formation of cracks due to thermal expansions. In such cases, then, care must be taken not to exceed an initial temperature of just 10° C when mixing. At the same time, cold temperatures in winter must not cause the concrete mix to fall below a value of 10 °C, otherwise there is a risk of blowholes forming, i.e. holes with frozen water in the concrete. These represent a considerable impairment to the strength and structure of the concrete.



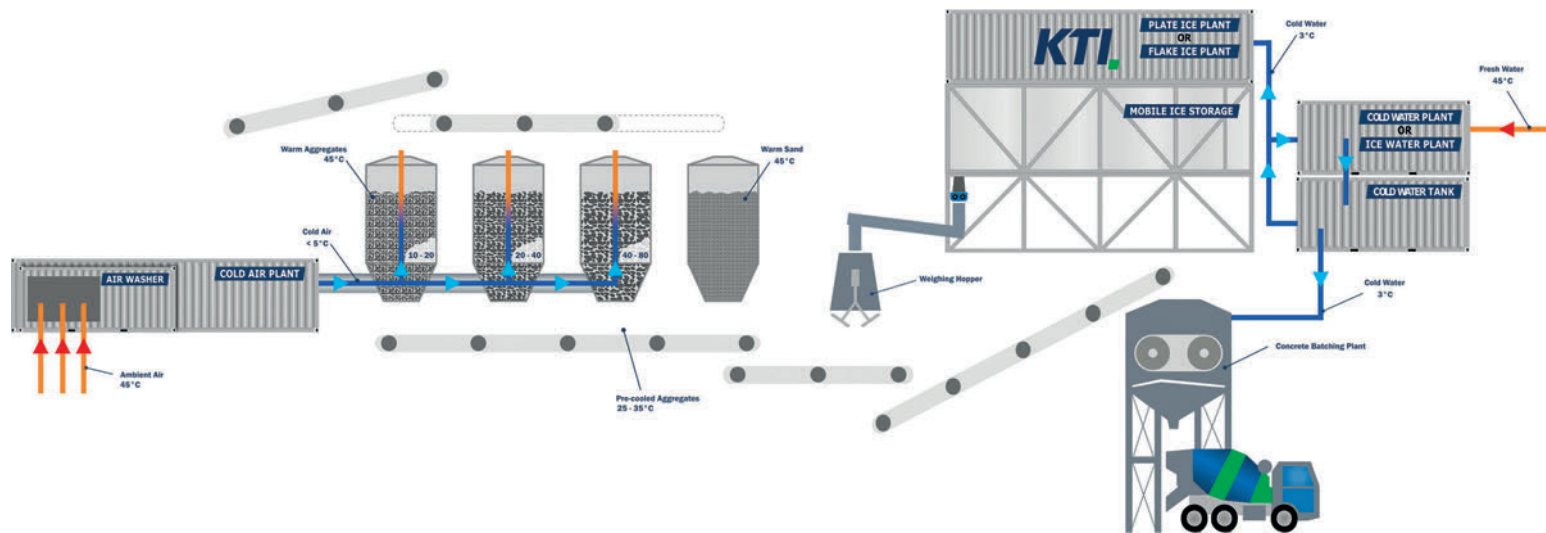
KTI-Sauter hot air systems (left) and a KTI cold air system (right in the background) assure the required temperature control of aggregates 365 days a year

TECHNOLOGY SO EFFICIENT,
that everyone wants it!



THE PMPM PLANETARY MIXER

Independently controlled and infinitely variable rotor and whirler speed guarantee practically perfect mixing and reveal the future for mixing technology.



Diagrammatic representation of a fully comprehensive concrete cooling system consisting of units for cold water generation, ice production, ice storage as well as for cooling aggregates with cold air

A combination of systems for cooling and heating concrete is preferable in such cases due to climatic conditions. The basis for this is once again a plate ice unit, which here has the advantage over flake ice that only one instead of two units are required for the 110 tons of ice needed on a daily basis. A plate ice unit can additionally ensure the provision of cold water, so that no separate cold water unit is needed to supply the daily 200 m³ of water for cooling the concrete mix. These measures alone reduce energy consumption by around 185 kW and the amount of refrigerant required by over 50 per cent. Not least, two flake ice machines would have incurred additional transport, installation and equipment costs, which is not an insignificant factor in particularly remote areas such as the example here. On top of this, aggregate cooling by cold air is in addition employed to cool the concrete to the very low temperature of 10° C. The special advantage is that the same gravel silos utilised for cooling in summer can also be employed for heating in winter. All that is needed is one system for generating cold air and one for generating warm air to ensure that the concrete temperature remains constant all year round. Depending on requirements, an appropriate system will be connected to the silo and the warm or cold air is conducted through the gravel. In this case, three hot-air units and a hot-water unit for mixing the concrete are employed. Since it is difficult to supply green fuels to remote construction sites, the heat is generated in each case by burning easy-to-store heating oil in accordance with EU standards. In urban regions, however, natural gas or biogas is also often used.

Trend towards compact and energy-efficient systems

By way of conclusion, it can be said that utilising cold water and air is preferable to ice in terms of energy. Energy efficiency in the cooling and heating of concrete will also be-

come an increasingly important factor considering the opportunities for savings that already exist today in terms of energy consumption as well as the global movement still developing towards efficient industrial facilities and consumers. In the heating sector, the focus is especially on renewable fuels, such as wood pellets, wood chips and biogases. Another trend can be seen with the space requirements of system set-ups for concrete cooling and heating. As with the example in South America, space can be saved by eliminating individual installations, which pays off on urban, generally cramped construction sites. Here, the solution is primarily modular equipment permanently installed in 20- or 40-foot containers, for example, that can be stacked so that less space is required in breadth. This can save space in densely populated areas where space is expensive, while reducing transport costs in remote regions. ■

FURTHER INFORMATION



KTI-Plersch Kältetechnik GmbH
 Carl-Otto-Weg 14/2
 88481 Balzheim, Germany
 T +49 7347 95720
 F +49 7347 957222
info@kti-plersch.com
www.kti-plersch.com

Worldwide #1 in Concrete Cooling and Heating

KTI.

INNOVATION WEEKS

Until October 2021 - At Our Headquarter in Balzheim/Germany

EXPERIENCE

*Get in Touch
with us!*



OUR SOLUTIONS

- ... to elevate concrete production 365 days a year – in cold and hot weather
- ... to improve efficiency, quality, and operating costs in concrete production
- ... for Ready-mix, Pre-cast, and Mass concrete producers



KTI-Plersch Kältetechnik GmbH
www.kti-plersch.com | info@kti-plersch.com
Phone +49 7347 9572-0

Made
in
Germany

Quality concrete products for the U.A.E. market

منتجات خرسانية عالية الجودة لسوق دولة الإمارات العربية المتحدة

In the growing field of precast concrete manufacturing in the Middle East, Raknor name is marked as an innovating market leader, manufacturing and supplying pavers, tiles, curbstones, masonry blocks, ready mix concrete and customized precast solutions. Raknor earned its pioneer place with dedication, innovation and hard work that was put in over four decades, making them one of the oldest manufacturers in the region. With their raw material drawn from their sister companies, Stevin Rock and Rak Rock, Raknor focus was on evolving the production processes by providing the latest technologies available while maintaining the environment with the best sustainable approaches.

لقد صنّف اسم شركة Raknor، في مجال تصنيع الخرسانة الجاهزة المتنامي في الشرق الأوسط، كشركة مبتكرة رائدة في السوق، حيث تقوم بتصنيع وتوريد الأرضيات والبلاط وأحجار الأرصفة وكتل البناء والخرسانة المخلوطة الجاهزة وحلول الخرسانة الجاهزة حسب الطلب. واكتسبت شركة Raknor مكانتها الرائدة بفضل التفاني والابتكار والعمل الجاد الذي استغرق أكثر من أربعة عقود، الأمر الذي جعلها واحدة من أقدم الشركات المصنعة في المنطقة. وبالاستعانة بالمواد الخام التي تحصل عليها من شركتيها الشقيقتين، Rak Rock و Stevin Rock، كان تركيز شركة Raknor ينصب على تطوير عمليات الإنتاج من خلال توفير أحدث التقنيات المتاحة مع الحفاظ على البيئة باستخدام أفضل الأساليب المستدامة.

Raknor's vision "To build and maintain our position as a leading supplier of concrete products in the Ras Al Khaimah and beyond and to act as a leader in improving the sustainability in our industry." Can be witnessed as it is leading the highly advanced and demanding market of U.A.E, both in quantity and quality. This could be achieved by increasing their own expertise and sophistication to get ahead of the market demand.

In 2014 Raknor invested in a new fully automated concrete block machine RH 1500-3 MVA with Mac 8 hydraulics and oil bath vibration table technologies and an SM 2250/SX 500 mixing plant from Hess Group. The complete plant was installed and commissioned in 11 weeks, thanks to the local support by the Raknor team and professional project management. Four years later, in 2018, Raknor approached Hess Group again to develop a concept that can utilize the latest technologies in concrete products production and processing with the local resources and experience to take the Middle East market to the next level with new premium products.

Under the umbrella of Topwerk Group, SR Schindler and Hess Group could present a fully automated and integrated plant, consists of RH 2000-3 MVA, SM 3375 with 2x SM 400 mixers, advanced multicolor system, shot-blasting, curling, coating and grinding and a fully automatic handling system, that is flexible and allows the production of pavers with the single or combined finish.

In September 2018, the Topwerk Group headquarters was honored by a visit of the senior management of Raknor to discuss the further steps in the project, visited the production halls of Hess Group and some reference plants that produce

the targeted quality of products in Germany. The professional approach of Raknor led them to partner with a premium German producer for know-how transfer.

A few weeks later, and after checking different proposals, layouts and options, Raknor finally placed the order with Hess Group and SR Schindler. The plant is unique in the GCC and one of the biggest of its kind in the Gulf region.

Exclusive color mix technology for high-quality concrete products

Raknor has chosen the standard aggregate hoppers to be loaded by wheel loader but in addition a 6 stations big bag



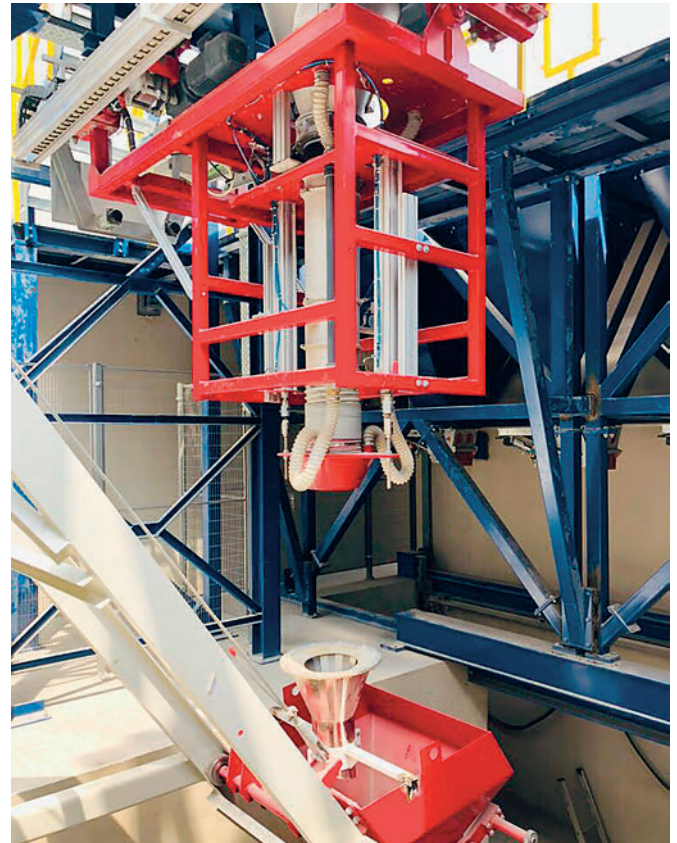
Aggregate weighing

dosing system for special face mix aggregates. Face mix and coarse mix aggregates are dosed and precisely weighed by separate aggregate buckets which run on the same rail track for maximum flexibility in dosing. Aggregates are conveyed to the separate skip hoists.

A special pigment dosing system, sub-supplied by the German Company Würschum, had been installed by Hess. Powder pigments are dosed and collected in two separate small weighing hoppers, which are movable. One hopper is installed for supplying the face mix pigments and the other one for the coarse mix. The hoppers have a quite unique outlet system, which is an extendable duct. The meaning is to embed the powder pigments into the aggregates in the skip hoists. By this solution the pollution of the powder pigments is controlled to zero level.

Raknor has decided to install two separate premium face mix mixers SM 400 from Hess Group to achieve a production of superior color mix products. The coarse mix mixer SM 3375 is also manufactured by Hess Group. A flying bucket system delivers the concrete directly to the block machine.

Since Raknor had made their experience with the Hess SM 2250 mixer in plant 1, their choice was easily done to install in plant 2 also the Hess mixers. Hess Mixers are a very good choice in terms of mix results, easy maintenance and cleaning because of the huge doors.



Pigment dosing system



A member of **TOPWERK**



**HIGH PERFORMANCE
& QUALITY**

World-class
VALUE-ADDING
for concrete
PAVERS & SLABS



SR SCHINDLER individual machines and production lines for premium-quality concrete products with custom finished surfaces.

www.sr-schindler.com

Innovative. Reliable. Efficient.



Mixing plant with two face mixers SM 400

The face mix concrete is conveyed via a 4-compartment flying bucket to the color mix station. The color mix station has also 4 compartments, this is essential to achieve a very high quality of multi-colored concrete products in the face mix and of course to avoid contamination with other concrete colors before being transported via belt conveyor to the block machine. Underneath each compartment is a movable belt installed, in order to lay a string of concrete onto the belt going to the block machine.

Each dosing belt can be controlled individually, in positioning and speed. The possibility of placing the material on the conveyor belt one after the other, on top of each other, or even in wave form, creates an extraordinary range of color designs.

By this process, the multi-color product will be unique to each other, which give at the end the look of the products, once it is installed in the yard.

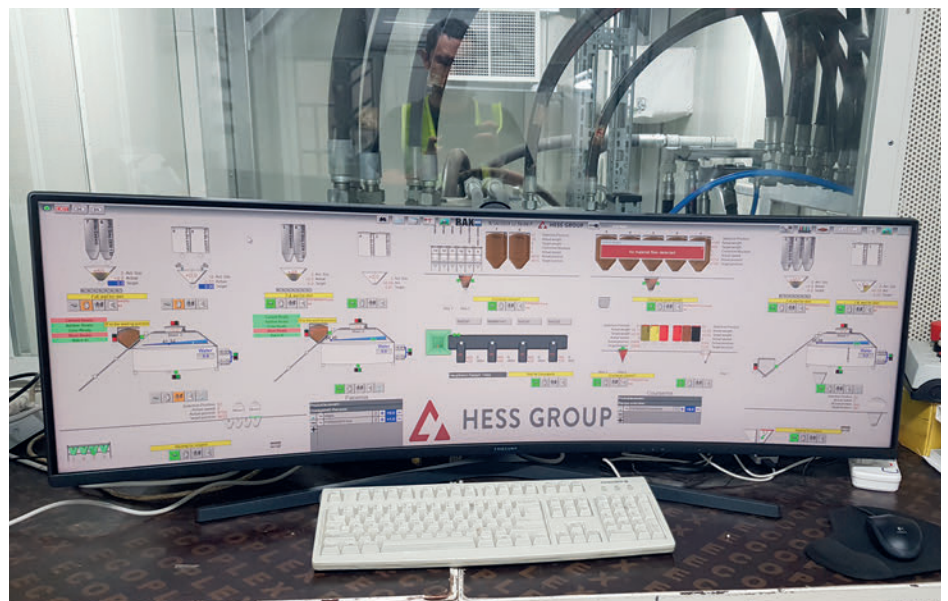
The mixing plant is controlled by Siemens S7 and the huge, curved screen set up in the control room of the block plant. Manual control of the mixing is executed by a mobile hand-held tablet, which the operator can carry around and control each part of the system as close as possible regarding to safety.

Concrete pavers production with RH 2000-3

The next step of the system is the RH 2000-3 MVA block machine. A special feature of the RH 2000-3 machine is the Hess



Color mix dosing



Control panel mixing plant



RH 2000-3 MVA concrete block and paver machine



Quality control station

Variotronic, an amplitude-controlled vibration with a 2-part oil bath vibration table technology utilising 1400 x 1300 mm pallet size. The oil bath vibration is a feature of Hess machines that provide permanent lubrication of each bearing of the counterweights because they are mounted in a housing filled with long-life lubrication oil. Therefore, maintenance of the bearings is reduced almost up to zero level. Even changing of the bearings is simple, since the housing can be taken off the vibration table from underneath the machine, the need of taking out the complete vibration table is no more required.

The production pallets in Raknor plant are made of steel, which is mostly standard in the Middle East, due to the climate conditions.

Raknor had chosen in plant 1 already the Mac 8 hydraulic system in the block machine, therefore it was no question that the new RH 2000 must have the high-end technology implemented in the hydraulic system of the machine, as well. The Mac 8 system, developed by Hess engineers, is a servo-controlled hydraulic system.



The perfect partnership FOR CONCRETE CURING SYSTEMS

CDS Curing

W www.cds-concrete.com
 E info@cds-concrete.com
 T UK +44 (0) 1782 336666 | USA +1 973-641-5663

HS Anlagentechnik

W www.hsanlagentechnik.com
 E info@hsanlagentechnik.com
 T NL +31 45 5671190 | D +49 2735 781160

Advantages of the Mac 8 system are:

- Very high speed of the hydraulic movements.
- overlapping movements of the filler boxes, tamper head and mould lifting, which counts in less cycle time.
- much smoother movements of the hydraulic operated parts develop less maintenance.
- very accurate positioning of the tamper head and mould up to a 10th of a millimeter.
- separate pressure control on each tamper head cylinder, therefore more accurate stone height results.

The face mix filler box has a built-in planning roller that provides several benefits when producing paving stones. It prevents the "digging" of concrete from the mold during reverse movement of the filling box. Production of face mix with higher water content contributes to the higher color intensity of the facer mix. As the next advantage, the planning roller also secures quicker cycle times due to the omission of the reversing operation. Worth mentioning that the achieved product surface is significantly smoother as well as better bonding between coarse mix and face mix concrete.

The block machine is equipped with the Hess Group electric mould change system. The mould can be exchanged in a limited time of a maximum of 15 minutes to achieve maximum flexibility and efficiency in production.

The production by RH 2000-3 with the mentioned production pallet size reach a steady rate of 3040 square meters pavers in 8 hours, therefore a fast-controlled handling system (V-belt conveyors, 24-ton elevator / lowerator, and finger cart) is required.

On the wet line Hess has installed a quality control station in order to take a full production pallet out of the production line for checking. Raknor installed a Qaver system here for checking the density and other important Quality aspects of the produced paving stones. All Collected dates from the Qaver system will be stored in the Hess statistic system and

transferred together with all relevant production data, starting from the batching, mixing and block machine production to the Raknor ERP System.

Curing / curing system

The 24to capacity finger cart with 22 layers and a total height of 8570 mm is enclosed in the big chamber room system from HS Anlagentechnik, with a total loading capacity of 7128 production pallets. To accelerate the curing of the stones, the air needs to be circulated inside of the curing chamber for establishing the same temperature in all corners of the big room. For this purpose, the curing chamber was equipped with the air circulation system from the company CDS.

When the curing phase is over, the finger cart takes the cured products out from the curing chamber to the lowerator. The production pallets are conveyed on a 30m long walking beam conveyor under the stone squeezer and further to the Hess Servo Cuber 700. Raknor had installed in plant 1 already the Servo Cuber 700, in order to have the same spare part available at the side, they decided to install the same equipment in plant 2.

Stone cubes are built by the cuber on the 28m long frame conveyor for strapping and conveying to the storage yard.

SR Schindler value-adding treatment

A SR Schindler cuber takes off the cured layers from the production boards transported by Hess conveyor to feed the SR Schindler value-adding line. The value-adding line concept allows Raknor to a large extent the inline treatment of the products.

There are 2 finishing lines running in parallel. The first line is equipped with shotblasting, curling and sealing system. The second line consists of calibrator and grinder with the necessary handling technology.



Value adding line

In-between both lines a long return belt conveyor is placed, to provide the flexibility of grinding and afterward shotblasting or curling and sealing. A further cuber is in place for transporting the products either to the separate SR Schindler packaging line or to the return conveyor. An offline feeding system is rounding up the value-adding solution.

Essential production pallet buffer

After the products output, the next step is to clean the empty production boards, turn them so that the production boards are used on both sides and then stack them so that the board finger always picks it up in a board stack. This stack is either stored in the buffer rack or is moved directly back to the concrete block machine. The board buffer has a capacity for 3500 production pallets.

Potential for subsequent upgrading in the future

The plant is designed in such a manner, that it might be converted later as a "first in first out" solution. This means that the products that are first entering the curing chamber are also the first to be removed from there. This will be handled by a second finger car on the backside of the curing chamber. A lowerator besides the back of the curing chamber is foreseen including a second dry line conveyor. The cuber number three in the value-adding line has already the extension to



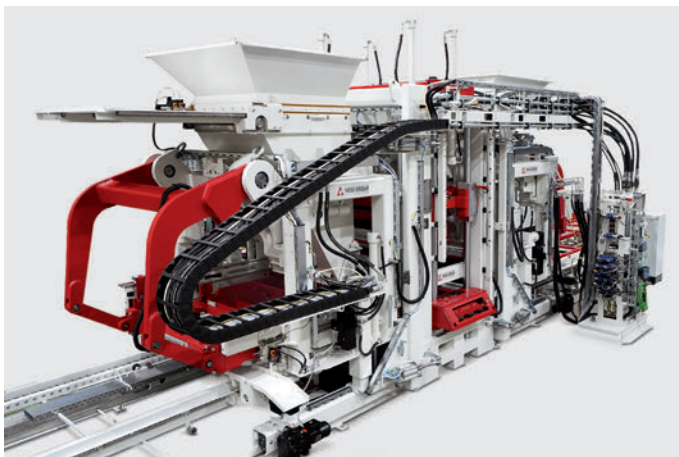
Pallet buffer finger cart

pick up from the future dry line. This will make the complete handling system of the inline value-adding line as efficient as possible.

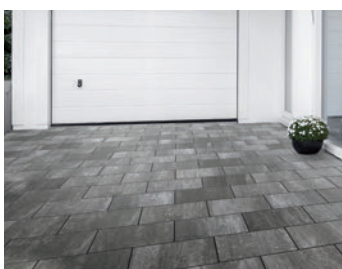
All in all, this concrete production and refinement system at Raknor is a high-end line that is unique in this set-up in the Middle East. The value-adding solution, that enables Raknor to finish all the concrete products in the line, exists nowhere else in Middle East in this form, that you can do everything, no matter if blasting, curling, brushing, grinding. Usually, in the Middle East, the production facilities are placed separately so



A member of **TOPWERK**



RH 2000-4 MVA –
high **PRECISION** *in*
concrete **SHAPING**



HESS GROUP is a worldwide leading supplier of high performance concrete block machines, dosing and mixing systems as well as the associated packaging and conveying technology.

www.hessgroup.com

We put concrete into shape.



Remote handheld control

that the stone cubes must transfer them to another hall where surface finishing is processed.

Raknor has decided on such a huge setup, after they visited Hess and SR Schindler installations in Germany, with the since of producing exactly the same products with the highest class Quality compare to the German superior suppliers.

There has been considerable interest in the new product range that Raknor can offer since the new plant was commissioned in 2019. A number of high-profile exhibitions were attended where a vast array of Raknor finished products were displayed. The feedback from clients has been overwhelmingly positive in terms of the quality and design options available for customers to create their own bespoke paving solutions. In particular, the products have been well received by the architectural consultant community, who are eager to collaborate with a manufacturer with the ability to fulfill their client's design ambitions.

Raknor's ambitions are not limited to the UAE. The consistent quality and wide range of design options have attracted inquiries from further afield, notably Saudi Arabia, Malaysia & Bahrain. Indeed, it is this proven technical strength, the wide range of finishes and attractive pricing that has been instrumental in Raknor securing a large order in Bahrain for a high-profile project.

As part of a larger group of Ras al Khaimah Government owned companies, Raknor has the capacity, longevity, financial security, and flexibility to supply projects of all sizes from small to mega-sized. Its close proximity to Saqr Port in Ras al Khaimah means that it can easily supply paving solutions to other countries regionally and internationally. ■



TOPWERK sponsored the free download possibility of the pdf of this article for all readers of CPI. Please check the website www.cpi-worldwide.com/channels/topwerk or scan the QR code with your smartphone to get direct access to this website.



FURTHER INFORMATION



Raknor L.L.C.
Khor Khuwair Street, Khor Khuwair
Ras Al Khaimah, U.A.E.
T +971 72668351
info@raknor.com, www.raknor.com



Topwerk Group
Freier-Grund-Str. 123, 57299 Burbach-Wahlbach, Germany
T +49 2736 49760, F +49 2736 4976620
info@topwerk.com, www.topwerk.com



Hess Group
Freier-Grund-Straße 123
57299 Burbach-Wahlbach, Germany
T +49 2736 49760
info@hessgroup.com, www.hessgroup.com



SR Schindler
Hofer Straße 24
93057 Regensburg, Germany
T + 49 941 696820
info@sr-schindler.com, www.sr-schindler.com



Würschum GmbH
Hedelfinger Strasse 33, 73760 Ostfildern, Germany
T +49 711 448130, F +49 711 44813110
info@wuerschum.com, www.wuerschum.com



CDS Group
Cinderhill Industrial Estate, Weston Coyney Road
Longton, Stoke-on-Trent, Staffordshire ST3 5JU, England
T +44 1782 336666, F +44 1782 599279
info@cds-group.co.uk, www.cds-group.co.uk



HS Anlagentechnik C.V.
Veldkuilstraat 53, 6462 BB Kerkrade, The Netherlands
T +31 45 5671190, F +31 45 5671192
info@hsanlagentechnik.com
www.hsanlagentechnik.com

Badinblock s.r.l., 33083 Villalta di Chions, Italy

Passion drives Italian manufacturer of machinery to the Middle East market

الشغف يقود شركة إيطالية لإنتاج الآلات إلى سوق الشرق الأوسط

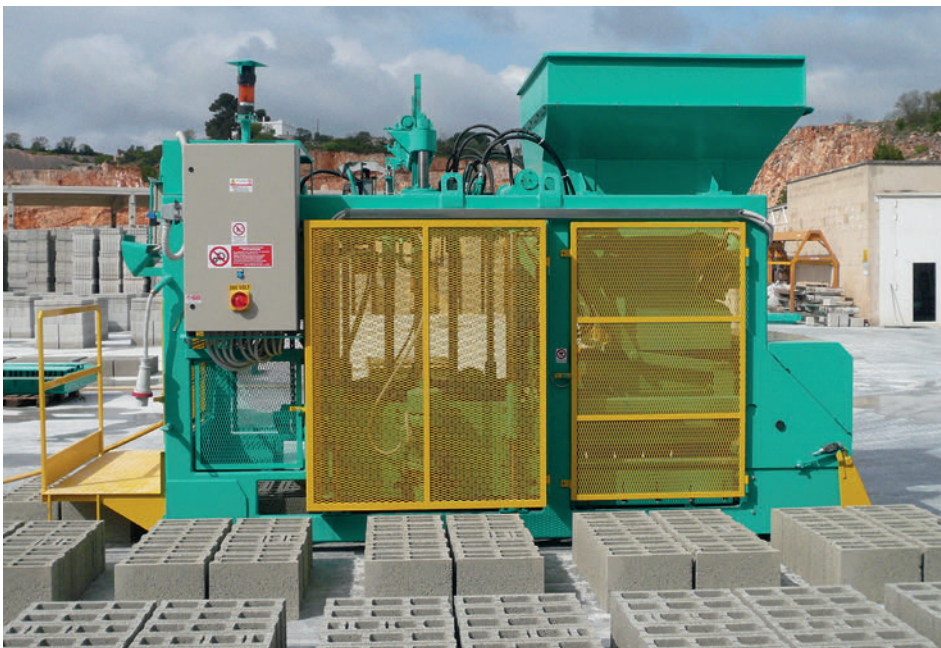
BADINBLOCK's story is a story of passion, of which - like of love - nobody knows where it comes from, how it carries us away and conditions our choices and way of life. Sometimes it arises spontaneously; sometimes it is handed down, as in our case. Badinblock has chosen to embrace the countertrend: instead of falling into the temptation to sell SACME to a foreign company, it has returned under the wings of its original family. Badinblock with SACME can draw on a wide range of experience and project themselves on the international market with greater strength and with many technical innovations on the horizon, with particular attention to the Middle East market.

إن قصة BADINBLOCK قوامها الشغف - تمامًا مثل الحب - لا أحد يعرف من أين أتى، وكيف ننجرف معه بعيدًا، حتى إنه يحدد خياراتنا وطريقة حياتنا. في بعض الأحيان قد يولد عفويًا، وفي البعض الآخر تتوارثه الأجيال، وهو ما حدث معنا. فقد اختارت Badinblock أن تسيير عكس التيار: فبدلاً من أن تقع أسيرة الإغراء وتبيع SACME لشركة أجنبية، فقد عادت لأحضان عائلتها التي تنحدر منها. فأمام شركة Badinblock التحليق بعيدًا مع SACME لتسفيد من مجموعة واسعة من الخبرات وفرض نفسها على السوق الدولية بقوة أكبر حيث تلوح في الأفق العديد من الابتكارات التقنية، مع إيلاء اهتمام خاص لسوق الشرق الأوسط.

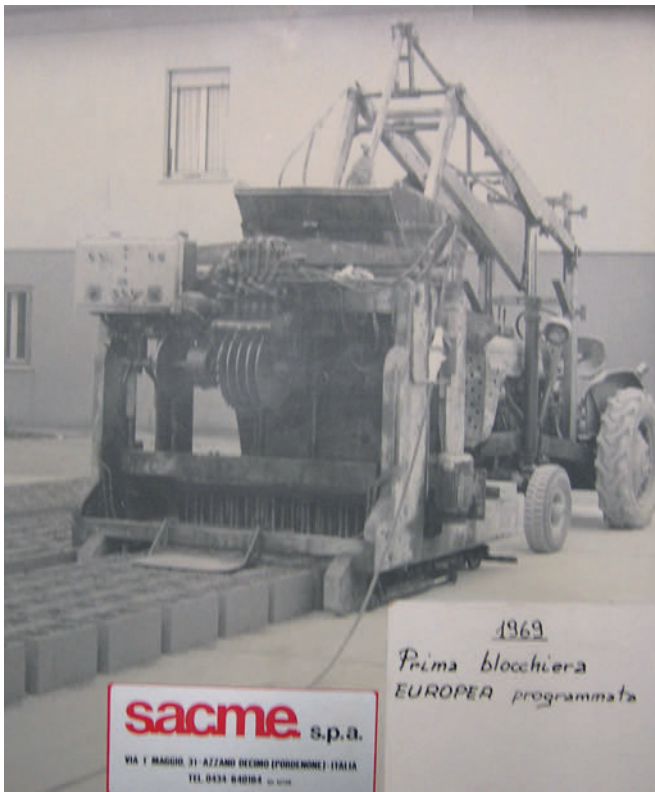
It was Badin grands that in the distant 1960s thought up and planned the first automatic mobile machines for the production of previously manually made concrete products. It was the time of birth of SACME, with its machinery that has been sold all over the world. Today, the same passion is the driving force behind Badinblock, which is born from the first experiences of SACME and has known how to maintain those creative values and energetic drive to unite them with three generations of experience and continuous improvement.

From egg-layer machines to mixing plants

Badinblock carries on the tradition started with SACME: egg-layer machines pressing on the steel plate without dissipation of vibrations on the ground, and therefore egg-layer machines with precision comparable to fixed systems. But it has to be said the Badinblock is not specialized only on this kind of egg-layer machines, but also produces: molds for any block making machine; automatic SACME stationary



Many manufacturers of concrete products in the middle-east have chosen Badinblock's egg-layer machines for the quality of compaction and for the possibility of using mobile machines outdoors in automatic mode and therefore with constant production standards.



One of the first automatic mobile SACME machines for the manufacture of concrete products.

systems that are reliable, easy to assemble and do not wear out the handling tables; multi-layer egg-layer machines and stationary machines; the company also supplies and installs concrete mixing plants and it has long experience in and

innovative solutions for the manufacture of Thermoblocks with insulation panels inside. All the mechanical parts of the machines as well as the hydraulic and electrical systems are stubbornly designed and constructed 100% in the company's workshop in Italy by highly specialized workers. The products have very low maintenance costs, low downtimes and live for decades.

The passion and professionalism, which has made Badinblock a leader on the Italian and the local market and well-known as manufacturer of high quality mobile block machines - according to Badinblock the block-machine 1021 is known as the "Ferrari" in the egg-layer machines market segment -, is now well appreciated by international customers. According to Badinblock passion drives the company to create ever better and more productive machinery to meet their customers' demands and needs.

Badinblock is working in the Middle East market for over 30 years now and is doing their best to satisfy hundreds of customers. The Doha Festival City in Qatar, the Mall Dubai Complex and the Palm (residential facilities and Atlantis hotel) in Dubai - all were built with SACME products.

Many producers in the middle-east have chosen the company's egg-layer machines for the quality of compaction and for the possibility of using mobile machines outdoors in automatic mode (and therefore with constant production standards) that use not the PLC but the original SACME system, provided with an electromechanical program (patent no. 873398) which is composed of a series of cams and limit switches. This system permits a constant working of the machine even with unfavourable conditions, i. e.: voltage rush, humidity, dust, very hot or cold weather, etc.



All the mechanical parts of the machines as well as the hydraulic and electrical systems are stubbornly designed and constructed 100% in the company's workshop in Italy by highly specialized workers.



Badinblock also produces molds for all kinds of blockmaking machines.

Growing interest in the Middle East

Badinblock's local dealer in Oman is SATA LLC, a private company established in 1971, which is owned and managed by the Qassim family, and registered in Muscat, Sultanate of Oman. SATA LLC is a multi-franchise enterprise with strong alliances with world-leading brands, and a skilled workforce of about 200 employees.

SATA was founded by Abdul Rasool Kassim, who in the early 1970's was running a transport company. Since the foundation, operations have grown steadily over the years and the company diversified into different sectors: luxury cars, trucks and buses, industrial and marine engines, truck and trailer components, construction machinery, generator sets, transport, and insurance.

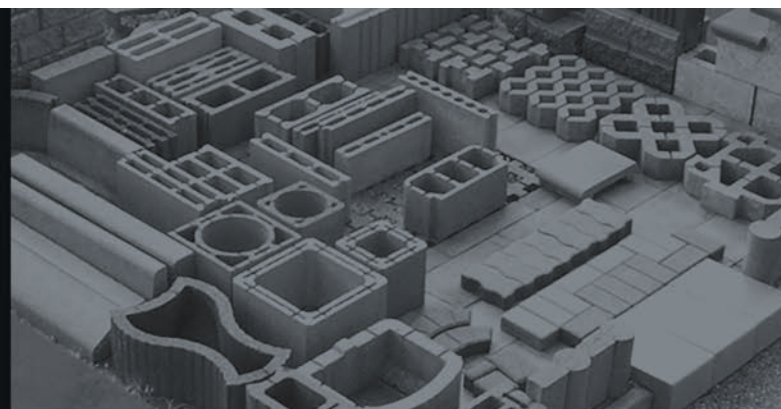


Badinblock has long experience in the manufacture of innovative solutions for the production of Thermoblocks with insulation panels inside.



Feeding of the automatic block making machine with concrete

BADIN BLOCK



50 YEARS OF EXPERIENCE IN BLOCK MACHINES



Even under extreme climate conditions the egg laying machines from Badinblock do their work very reliably.

In 2018, to satisfy their customers' demand and to utilize the inhouse facilities and expertise, SATA got in touch with Badinblock, the inventor of automatic block manufacturing machines in Europe, and established a partnership. A factory visit to Italy was arranged for the first customer; after having seen the production quality and technology first hand, the customer placed the order.

The first machine was delivered to Ibn Bisya Trading, a crusher operator who was striving to get into the concrete block industry. He visited Badinblock and asked for the best machine in the industry. Badinblock supported the customer from scratch to the finished plant. The supply included the complete production floor, the concrete mixer, the concrete block machine, along with material handling equipment such as forklifts with special attachments on them, namely block lifting device, wet concrete bucket to feed the automatic block

machine, integration of all machines and bringing all controls to one common control room.

Customers are very satisfied with quality of the blocks and the machines. Soon other customers came, and more interest was created in the market. SATA is fully committed to provide best services to its customers and to give extra support whenever needed. ■

FURTHER INFORMATION

SATALLC

Sata llc
T +968 24502515
info@satallc.co.om
www.satallc.com

BADINBLOCK

Badinblock s.r.l.
Via Villalta, 3A
33083 Villalta di Chions, Pordenone, Italy
T +39 0434 630197, F +39 0434 630527
info@badinblock.it, www.badinblock.it

sacme

Sacme
www.sacme.eu



Ready for delivery - an automatic mobile egg laying machine from Badinblock

Kobra Formen GmbH, 08485 Lengenfeld, Germany

International Architectural Projects – Wausau Tile Inc.



المشاريع المعمارية الدولية - شركة Wausau Tile Inc.

■ Holger Eckelt and Stefanie Schaarschmidt, Kobra Formen GmbH, Germany

The Miami Worldcenter - the second largest private construction project in the USA - is currently built in Miami, Florida. Located between South Beach and Miami Financial Districts, the nearly 30-acre site has been under construction since 2017 and is slated for completion in 2022. In Houston, Texas, several urban modernization and expansion projects are continuously taking place, from the impressively large Convention Center to Post Oak Boulevard to Bagby Street - across the entire city center, so to speak.

جرى بناء مركز ميامي وورلد سنتر - ثاني أكبر مشروع بناء خاص في الولايات المتحدة - حاليًا في ميامي، فلوريدا. ويوجد ما يقرب من 30 فدانًا، بين منطقتي ساوث بيتش وميامي فاينانشال، قيد الإنشاء منذ عام 2017 ومن المقرر الانتهاء منهم في عام 2022. وفي هيوستن، تكساس، يتم إجراء العديد من مشاريع التحديث والتوسع الحضري بشكل مستمر، بداية من مركز المؤتمرات الكبير المثير للإعجاب إلى Post Oak Boulevard إلى شارع Bagby - عبر وسط المدينة بأكمله، إذا جاز التعبير.

Wisconsin-based Wausau Tile Inc. is involved in all of these projects with an experienced team of engineers and project managers, working with local architects and designers to create all of the exterior finishes. Architectural paver and slab systems, as well as outdoor furniture and precast concrete elements, individually manufactured for the respective projects are produced in Wausau Tile's manufacturing facilities in Wisconsin and transported thousands of miles across the United States. By focusing on the project business, Wausau Tile holds a special position in the industry founded on a world-class distribution network combined with state-of-the-art production methods.

Wausau Tile was founded in 1953 by Edward Creske with a clear corporate philosophy of commitment, expertise and innovation that still aptly describes Wausau Tile to this day: Quality and service being the basis for sustainable and long-lasting customer relationships.

In the company's nearly 70-year history, Wausau Tile's product portfolio is continuously expanding. The company opened a new plant for paver production in 2016, which, owing to its production parameters, makes it possible to achieve individual design options in terms of format, color and formulations. All concrete block products are manufactured 100% in Kobra molds using the latest state-of-the-art technologies. A wide range of variations are possible. After selecting the type of stone - Wausau Tile has a standard product range of pavers of over 70 sizes and formats - surfaces and embossments can

be chosen in conjunction with the desired coloration. During the color matching process, aggregate and colors are selected in close coordination with the architects and designers in charge of the project so that, for example, color gradients can be individually designed. The concrete block mix design is coordinated with the respective product and satisfy all industry-specific quality criteria.¹

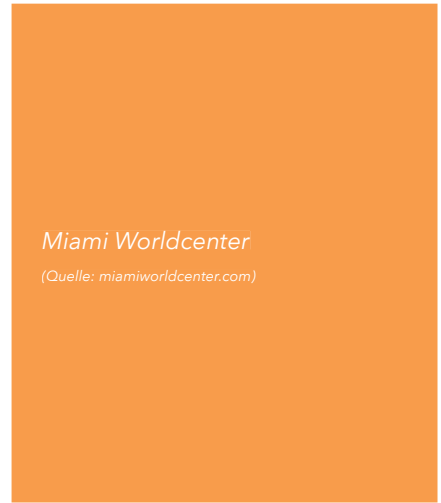
Miami Worldcenter - Master planning for diverse urban land use

Vision, organization and development

The vision of the Miami Worldcenter as an urban nucleus in the heart of one of the world's most vibrant metropolises has existed for several decades. In fact, the project's development phase began back in the early 2000s, and construction finally began in 2017.

The project is led by Miami Worldcenter Associates, a company that specializes in the further development and restructuring of dynamic, densely populated communities in North America and expands underutilized urban neighborhoods and landscapes with strategic investments.²

The ten-block mixed-use site is situated in the heart of the city, housing arts and cultural centers, dining and hospitality, along with residential and commercial properties as well as select retail and entertainment venues.



Miami Worldcenter

(Quelle: miamiworldcenter.com)



Nearby attractions include the Perez Art Museum, the Frost Museum of Science and the Arsht Center for the Performing Arts. The Port of Miami, Dade College, Bayside Marketplace and the new federal courthouse are also within walking distance.

Kimley-Horn, one of the nation's leading planning, engineering and design consulting firms, is responsible for the design of all exterior facilities. With its close to 3,500 employees and more than 80 offices across the United States, the company provides extensive services in a wide range of disciplines and looks back on years of experience in the field of public infrastructure projects.³

The creation process of the Miami Worldcenter is being implemented together with the real estate project management and consulting company Square Edge, which has taken over the overall management of the project.⁴

The interaction between project management, architects, designers and the producers of the materials required for the individual construction phases is a challenging logistical and organizational feat that is reflected in the project's master plan. For this reason, the overall construction phase of the Miami Worldcenter is divided into several sectors.

As connecting element, the outdoor area is designed as a lively, walkable pedestrian zone between the individual sections. Unlike the otherwise customary colorful designs in

Miami, it is consistently kept in the colors black and white. All buildings also follow this color scheme to draw attention to the numerous cultural venues and shopping areas. Despite the different designs used in the building construction, the entire complex has a very homogeneous and neutral appearance. Unique works by international artists such as the German painter Franz Ackermann, who decorates the east and south facades of one of the numerous buildings with a large-scale mural, brighten up the Miami Worldcenter.

In addition to its art, which is clearly recognizable to pedestrians as well as from afar, other elements are integrated throughout the area that serve as reference points, such as the legendary Pan Am Globe, which was built in the 1930s in the airline's eponymous terminal, now Miami City Hall. Once its restoration is complete, it will be located at the center of the Miami Worldcenter. According to Square Edge, the purpose of displaying international artworks is to connect the world in the Miami Worldcenter district, which also serve as nodes.

**Pedestrian areas and zones as visual nexuses:
13 million square feet of Wausau paving**

Pedestrian areas and zones, which will be entirely designed using Wausau Tile's paver system, provides yet another visual link between each sector. Several workshops were conducted in close coordination with Kimley-Horn and Square Edge to select various rectangular formats that will be manufactured



Laying Wausau pavers

on concrete block machines as well as hermetic presses. A total of 13 million square feet is slated for the construction project.

The planners and architects chose Wausau Tile because the company has extensive experience in the project business, information and plans were available quickly and the product quality is outstanding. This is consistent with the corporate philosophy of Wausau Tile's founder (see above), which has been successfully continued by the highly committed team to this day.



30 JAHRE
www.kobragroup.com

WE SPEAK CUSTOMER

KOBRA EXPORT SALES



WWW.KOBRAGROUP.COM

TOOLS. DRIVEN BY
KNOWLEDGE.

CARE. POWERED BY
EXPERIENCE.

1 | Head of Sales
Andreas Gebauer
F +49 [3 76 06] 3 02-25
M +49 172 3667 454
andreas.gebauer@kobragroup.com

3 | Sales
Julia Haubenreisser
Middle East
F +49 [3 76 06] 3 02-945
julia.haubenreisser@kobragroup.com

2 | Head of Export Sales
Kristin Seiler
South Europe | Mena | Middle East | Asia
F +49 [3 76 06] 3 02-54
kristin.seiler@kobragroup.com

4 | Sales
Anton Bauer
Middle East | Asia
F +49 [3 76 06] 3 02-7439
anton.bauer@kobragroup.com



Laying Wausau pavers

In the development process, various formats and potential installations were first tested. This enabled the architects and project managers involved to see for themselves the modern manufacturing processes at Wausau Tile's headquarters and to define the product characteristics for the project together with their engineers.

For example, the mix design was specially adapted to the particular requirements of the project. In parallel, defining the colors and coordinating the individual color schemes of the stones involved took a great deal of time.

As previously mentioned, it was decided to use black and white concrete block systems interspersed with natural stone-look paving to give the companies located in the Miami Worldcenter visual space to design their own areas and to enhance the effect of art and sculptures in the public space.

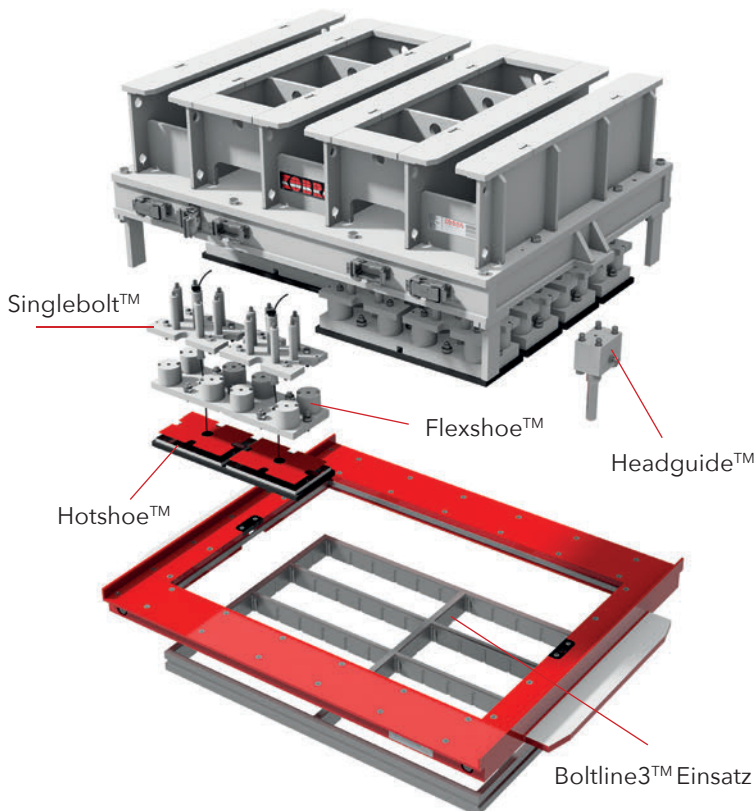
The paving consists of slender rectangular stones in 24x12 inch and 24x8 inch sizes, manufactured in Kobra molds and combined in the installation with a 12x6 inch concrete block, produced on Wausau Tile's hermetic press.

The installation patterns differ depending on the area within the Miami Worldcenter. Pedestrian walkways, which serve as a link between the individual sectors, are characterized by straight stone laying. In areas where outdoor furniture is installed to invite people to linger, the installation is more varied, but still keeps with the linear look of the overall project.

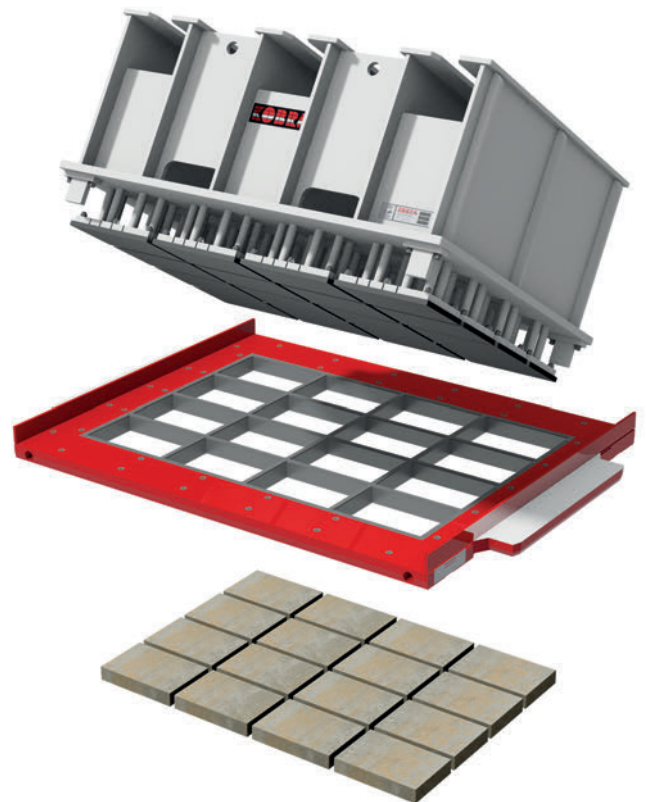
Finally, in the installation process, the pavers were cut from Kobra shapes while already installed to fit the 12x6 inch stone in a straight line - a unique feature due to the installation pattern chosen. Furthermore, no drainage channels or electrical distribution boxes are visible as they are located beneath the paving, so as not to disrupt the overall appearance.

Special requirements for Kobra concrete block molds

Such a large-scale project also places special demands on the molds needed to produce the concrete blocks. This applies to both the technology and features of the mold itself, as well as the projected wear part replacement.



Boltline3™ paver shape from Kobra



Boltline3™ - Paver mold

All Kobra molds used for the Miami Worldcenter project employ Boltline 3™ technology, as their design ensures exact angularity in the cavities. This is essential for the mass of stones to be produced and the laying pattern chosen for the project because the smallest tolerances in surface diagonals and straightness can be adjusted. The entire mold is modular. The insert is made of individual walls with bolted cover plates. To achieve a high cycle rate, the molds are carbonized in Kobra's in-house hardening furnaces and have a hardness grade of at least 68 HRC.

The tamper heads are equipped with the Hotshoe™ system, which prevents the shoes from sticking to the concrete and supports the structuring of the stone surface. In combination with Flexshoe™, even better compaction results on the stone can be achieved, as the controlled oscillating shoes provide an additional damping effect and thus an overall improved surface finish.

The molds used for the project are also equipped with the Headguide™ forced centering system. This ensures precision plunging of the tamper head into the mold bottom and also has the effect that the mold is constantly guided in the machine, thus preventing the shoes from hitting the insert walls.

Thirteen million square feet poses special challenges not only in terms of mold technology, but also in terms of the main-

tenance concept. Using several identical molds makes sense from a manufacturing point of view, but it is not the only strategy when it comes to economical mold management. And this is why Wausau Tile makes use of the benefits that the Kobra modular system offers and replaces wear parts on the mold at regular intervals in order to achieve higher cycle rates overall.

Bagby Street - Sustainable road construction with Greenroads Foundation certification

Combining current demographics and modern transportation planning

For the Bagby Street construction as part of the urban modernization and expansion of Houston's urban core, Wausau Tile partnered with SWA Group, an international landscape architecture and planning company with offices in the U.S. from San Francisco to Houston to New York, and, given its numerous projects in Asia, with studios in the United Arab Emirates and Shanghai.⁵

Bagby Street is the first of currently four construction projects in Houston and the first in the state of Texas to feature a new sustainable streets concept certified by the Greenroads Foundation. The foundation, which evolved from research conducted by the University of Washington and its partners, has



SERVOPAC® SELECT & CLASSIC

Responsive. Reliable. Versatile.

+1.989.354.4111 | besser.com | sales@besser.com



Hobby Center and Tranquillity Park 2017



Hobby Center and Tranquillity Park 2021



City Hall 2017



City Hall 2021

developed a system for evaluating sustainable design and construction practices and awards points that can be used to certify projects. This is essentially a collection of 48 sustainability best practices for use in street construction.⁶ The 13-block Bagby Street is located in Houston's Midtown District, one of the city's largest and oldest central neighborhoods. As the city grew and became increasingly industrialized during the 20th century, multi-lane roads to the center were needed to accommodate the massive surge in traffic. Since then, Houston's working and living patterns have undergone a transformation, with numerous residents combining their living and working centers within midtown. Consequently, one of the greatest challenges for reconstructing the street was to remove its "drive-through" character and make it more pedestrian-friendly.

The project design combines the needs of current demographics with transportation planning in this heavily trafficked area of Houston, providing a wide pedestrian area on both sides of the street and a two-lane bike lane on the east side. It also includes the installation of gardens as well as better access to Midtown Park and local businesses. This is because approximately 40% of Houston residents do not drive within the city.⁷ As such, Bagby Street serves as a prime example of sustainable street design that combines public transit, travel and pedestrian areas with crosswalks to downtown, reflecting all aspects of modern infrastructure.

Consideration of regional requirements in terms of the product properties of concrete block systems

Since Wausau Tile has already been involved in several other projects in Houston, the company is familiar with the region-specific requirements of the city's infrastructure and can take these into account in the product properties of the desired paver and slab systems. This includes defining the stone formats, concrete formulation and project-specific color selection.

SWA designed rectangular pavers in herringbone installation for the pedestrian area. As cooler shades are currently becoming prevalent in the Houston cityscape as well, light to dark shades of gray are used for this area, resulting in a varied installation pattern. The use of black hexagon bricks in the design of the bike lanes creates a distinct contrast, as there are only visual barriers to the sidewalks in the traffic pattern.

SWA and Wausau Tile held several meetings to refine the product mix and were able to customize the aggregates after determining the necessary stone formats. The next step was to determine the individual colorations of the stones in detail and in combination with each other. Sample stones were produced and evaluated in a test laying at Wausau Tile. The development phase took about 14 months, and construction began in 2018.



Bagby Street: Stone installation pedestrian and bicycle area

Similar to the Miami Worldcenter project, products were shipped thousands of miles from Wisconsin to Texas - thanks to Wausau Tile's intensive cooperation and quick responses combined with the concrete blocks customized for the Bagby Street's project conditions.

CONTACT US NOW!

► salesm@samjungltd.com

Order made steel

Specialized material

Stress relief

Coated surface

Recyclable and Cashable

Excellent vibration transmissibility

WOW BOARD

STEEL PALLET FOR BLOCK MAKING MACHINES



Youtube



www.samjungltd.com

The approximately 117,000 square feet of concrete blocks were installed in block layers using machine installation on thinset. Because of differences in level within the overall area, different stone heights are installed. More than 50% of the area has already been completed. The project is scheduled to reach completion in May 2021.

The right mold technology for every concrete block product

For this project, all concrete blocks are manufactured in Basicline2™ molds from Kobra, which are characterized by a clear design consisting of an insert made of block material with circumferential chamber geometries to accommodate the flange assemblies including the running rails. This design prevents any unnecessary welded joints in and on the insert. The mold insert and cover plates have a hardness standard of 68 HRC and a hardening depth of 1.2 mm.

The upper part of the Wausau Tile molds are equipped with Headguide and Hotshoe.

The use of Basicline2 for the Bagby Street project is due to the format of the pavers and the number of cycles planned with the product.

Stone Technology

The exclusive four-color blend creates unique color gradients and complete creative control to customize color palettes. Wausau Tile has more than 73 molds (H-Series) and 74 different mold combinations of sizes and thicknesses (V-Series), making it possible to offer a perfect fit for every job and develop custom colors and sizes. All Wausau Tile pavers are rigorously tested and manufactured to meet the industry's tightest performance tolerances. Using state-of-the-art manufacturing technology, Wausau Tile's paver systems are produced with unique colors, sizes and custom options.

Wausau Tile has a detailed mold management system that makes it possible to factor in usage for projects, maintenance intervals and wear part changes.

The Wausau Tile product range is truly remarkable - outdoor furniture, terrazzo tiles, a wide variety of precast concrete products, and architectural pavers are all part of the company's repertoire. Regarding the latter category, Wausau Tile builds on more than 40 years of proven history and lives up



Basicline2™ - Hexagon stone mold



Basicline2™ - Paver mold



SLIM2 Quick Release Vibrator

The absolute lightweight in its class:

only 18,9kg at 14kN and 6.000 rpm*
up to 25% lighter than its competitors

Superb handling:

easy change among moulds
e.g. 12 vibrators in 10-15min

Best price-performance ratio

supreme compaction quality despite low investment
SL version: lower noise level than comparable vibrators

BRECON GmbH · Telefon +49 221 9544270 · Fax +49 221 9544277 · info@brecon.de · www.brecon.de



BRECON
smart vibration technology

* BRECON Außenrüttler mit SL Charakteristik(Synchronlauf) erreichen exakt die von der Frequenzsteuerung vorgegebene Drehzahl, z.B. 6000rpm bei 100Hz elektrischer Frequenz. Die Angaben sind bezogen auf Außenrüttler, die die gleichen Charakteristik aufweisen wie BRECON SL-Rüttler. BRECON SL-Rüttler sind in der Geschwindigkeit regelbar. Die SLIM2 Schnellspannhalterung ist auch für BRECON Hochfrequenz und BRECON Normalfrequenz Rüttler einsetzbar.

Mold Technology

Kobra has adapted its entire manufacturing processes towards a modular design, thus combining multiple advantages that cannot be realized in the same mold types in a welded design. This starts as early as the development of the stone and the constructive implementation of the layout required by the customer and continues through all the stages of a mold's life to the repair and reuse of mold parts.

Boltline™

Boltline technology relates to the design of the insert. Concrete block molds manufactured with this technology therefore adopt the module idea not only in terms of the frame, but also of the insert. All components of the mold base can be individually repaired or replaced.

The cost-efficient production of concrete products is supported and flexibility in production is increased with the targeted replacement of assemblies that wear out more quickly while continuing to use the mold parts that can be used multiple times.

Facts & benefits:

- Applicable to different types of inserts, such as straight or mixed layouts
- Frame bolted and reusable
- Lower tolerances on angularity, straightness and deviation of body edges than required by DIN 1339/1338.
- Replaceable wear plates bolted onto the mold frame

Basicline™

Basicline molds have a clear design structure consisting of an insert made of block material with different frame variants. This technology is used to produce classic concrete block molds for the production of paver systems, which are dimensionally stable and particularly wear-resistant with the Kobra quality standard Optimill carbo carbo 68 plus.

Facts & benefits:

- Special cavity geometries for uninterrupted hardening
- Hardness quality up to 68 HRC, hardness depth up to 1.2 mm
- Multiple insert changes possible in the old frame

Headguide™

Headguide ensures absolutely correct and centered installation of the overall mold in the machine and thus

protects particularly sensitive mini chamfers on large-format tamper shoes. The guide pins of the positive centering system ensure precise insertion of the tamper head into the mold bottom. With an all-round clearance of two tenths mm, the mold can move freely, but remains guided at all times. Wear of the tamper shoes and the top edge of the mold is minimized significantly, and the metal abrasion is almost completely prevented in the mold.

Facts & benefits:

- Bolt and bushing can be replaced as wear parts
- Ensures centered installation of the entire mold in the machine
- Protects sensitive mini-chamfers on large-format products
- Reduces wear on the upper edge of the mold

Hotshoe™

With Hotshoe, which consists of heatable tamper shoes and an integrated temperature control device, verifiably higher surface qualities can be achieved on the concrete block. The drying of the facing concrete prevents the tamper shoes from adhering to the concrete and helps with the texture of the block surface. Higher surface qualities and a refined finished surface appearance are achieved.

Facts & benefits:

- Verifiably higher surface quality on the concrete block, fewer rejects
- The temperature range with the Kobra control device can be controlled for customer-specific and individual product needs
- Prevents the adhesion of moist, fine facing concrete through controlled setting
- Shorter cycle times for products requiring intensive cleaning

Flexshoe™

Flexshoe is a useful compacting aid, especially for large format products and special formats. The tamper shoes are mounted on rubber supports which ensure improved compacting results and higher block surface qualities. »Flexshoe™« prevents uneven lifting up of the tamper shoes from the block and ensure optimum tamper shoe clearance due to the damping effects in the tamper head.

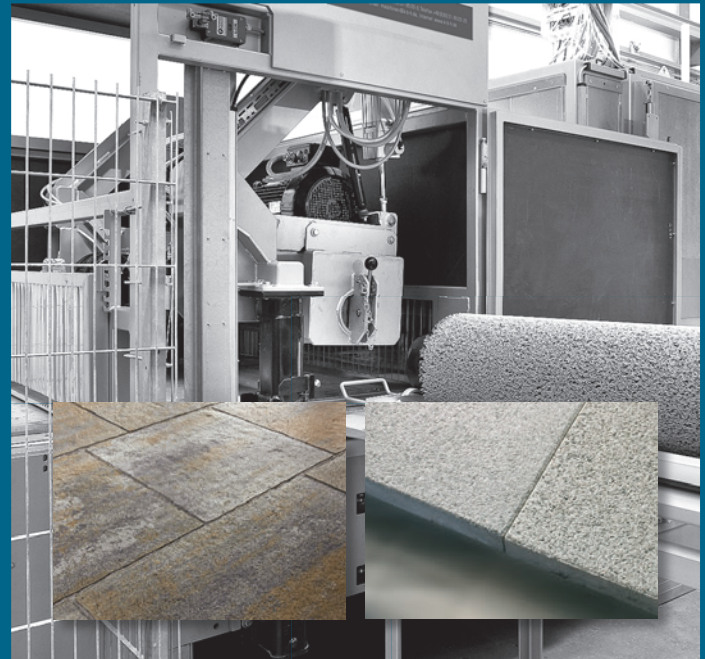
Facts & benefits:

- Improved compaction results for large and difficult to compact products
- Optimal vibration utilization in the cavity
- Consistent block height and perfect surfaces
- Higher damping effect and tamper head stability

to its self-imposed standards of service and quality in each and every one of its numerous design and architectural projects across the United States. The diversity of Wausau Tile's pavers and the products that can be customized according to the building project, as well as the professional competence of the team, are decisive factors for the company's success. The projects presented in this article are just two examples of the outstanding market position that Wausau Tile holds in this sector of the industry. They are a vivid demonstration of the significance of concrete block products in urban development projects and how important they are, not only in terms of functionality but also in terms of their design, for the development of new urban districts and streetscapes.

References

- ¹www.wausautile.com, accessed: 15.03.2021
- ²www.miamiworldcenter.com, accessed 16.03.2021
- ³www.kimley-horn.com, accessed 16.03.2021
- ⁴www.squareedgeinc.com, accessed 16.03.2021
- ⁵www.swagroup.com, accessed 22.03.2021
- ⁶www.transportation.gov, accessed 22.03.2021
- ⁷www.houstontx.gov, accessed 22.03.2021



Kobra sponsored the free download possibility of the pdf of this article for all readers of CPI. Please check the website www.cpi-worldwide.com/channels/kobra or scan the QR code with your smartphone to get direct access to this website.



FURTHER INFORMATION



Wausau Tile Inc
 9001 Bus. Hwy 51
 Rothschild, WI 54474, USA
 T +1 715 3593121
 F +1 715 3554627
wtile@wausautile.com
www.wausautile.com



Kobra Formen GmbH
 Plohnbachstraße 1, 08485 Lengenfeld, Germany
 T +49 37606 3020
 F +49 37606 30222
info@kobragroup.com
www.kobragroup.com

CURLING SYSTEM
 “nice haptics” Special abrasives brush – value enhancing

- Cleans, smoothens the product surface and creates a shiny finish
- Accommodates variation of product heights - either way front to back, left to right or even diagonally over the product layer
- Integration to the KBH Dancing Weights System possible – alternatively Stand Alone System
- Modular design allows accommodation of many different layer sizes and different product layer travel speeds – we design to plant specifications

When installed at the KBH Dancing Weights System 3 modes of operation are possible:

- Distressing and Curling
- Distressing only – curling brush raised
- Curling only – dancing weights raised

**Baustoffwerke
 Gebhart & Söhne GmbH & Co. KG**
 >> **KBH Maschinenbau**
 Einoede 2 , 87760 Lachen, Germany
 Phone +49 (0) 83 31-95 03-0
 Fax +49 (0) 83 31-95 03-40
maschinen@k-b-h.de
www.k-b-h.de

KBH Maschinenbau, 87760 Lachen, Germany

Competitive edge by diversification

ميزة تنافسية من خلال التنوع

Increasing competitive pressure as well as upcoming opportunities in diversification on Northern Ireland market made AG decide on an investment in a versatile in line Aging Machine.

إن زيادة الضغط التنافسي بالإضافة إلى الفرص القادمة في التنوع في سوق أيرلندا الشمالية دفع شركة AG إلى الاستثمار في مجموعة متنوعة من الآلات والماكينات القديمة.

Since 2008 AG successfully operates a state-of-the-art big board paver /block plant producing a wide range of horizontal paving product in multiple size and outstanding quality. In the past an offline tumbling line was used for aging concrete product. For an economical operation of tumbling drums certain product sizes should not be exceeded.

The efficient use of available resources combined with a vision made AG decide on an In Line KBH Dancing Weight Aging Machine to allow for diversification. During site review some hurdles to overcome were noticed - different conveying heights and limited space for electrical cabinets.

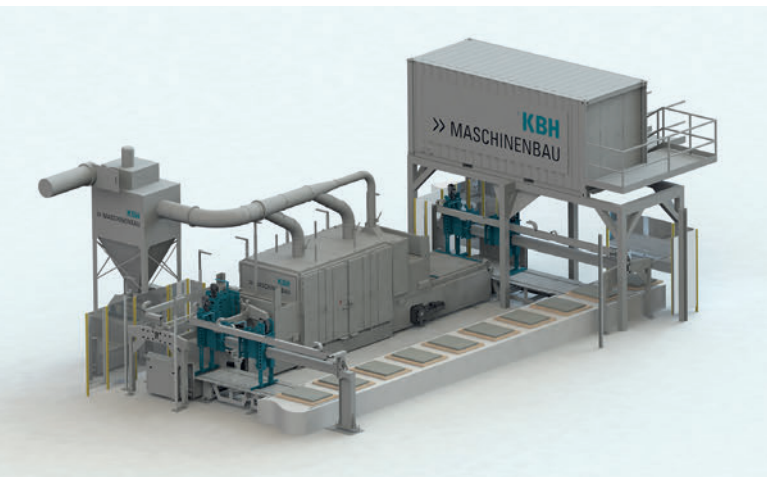
The Dancing Weight Machine was installed in parallel to the existing dry side conveyor, charged and discharged by fully electric layer pushers. The installation of fully electric lifting and lowering tables (pop up table) allowed for different conveying heights.

Limited space for electrical cabinets encouraged KBH to install them on a raised mezzanine. For ease of installation KBH decided to place all electrical cabinets in an easy to install electrical control room as container solution equipped with electric quick connects. This electric control room represents an initial higher investment, however, tremendously saves on installation time.



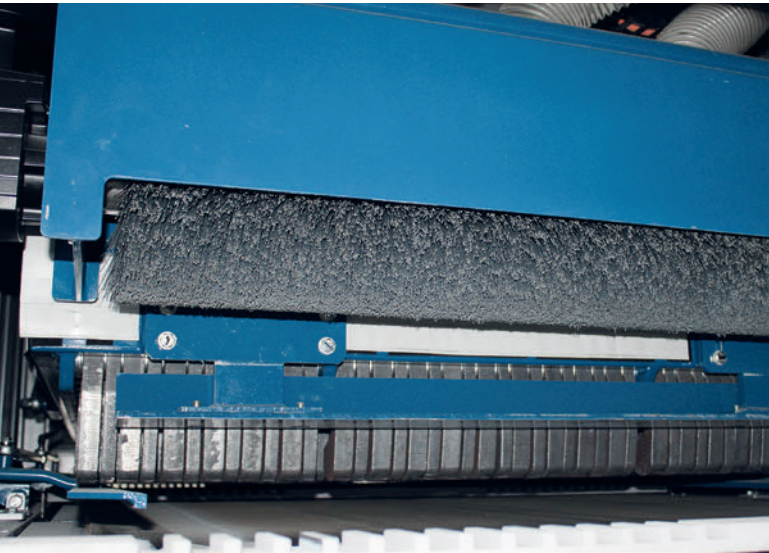
Product layer polygon stones w. false joints

Stephen Acheson: "...the impressive Dancing Weight Machine allows aging a big variety of concrete product fully hands off and of course in the pattern as they are produced in the mold of the paver machine. While using the tumbling drum the cull rate was in the vicinity of 5 to 10% and the max-



KBH electrical control room as container solution





Integrated Curling

imum product size allowed (for economic reasons) was not larger than app. 200 x 300mm (8" x 12"). Needless to say, a significant amount of personnel being necessary for product cubing afterwards can now be saved. With operation of the Dancing Weight machine the product portfolio of distressed product was widened significantly. Nowadays slabs up to a size of 1,2 m x 1 m (47" x 39") as well as polygonal shaped product with false joints do not represent an obstacle in technical and economical view. The cull rate is virtually 0% ..."

An integrated Curling light system is a specialty AG opted for. It allows for superior product cleaning and already gives a bit of a smoother surface which is one leading aspects of the curling feature.

Both, the Dancing Weight Machine and the Curling System are vacuumed by a high-capacity dust extraction system (by KBH). Larger sized debris is completely removed from the product layer and transported in a debris box by means of a reliable debris conveyor

KBH In Line operations are designed to match the pace of the wet side output. The KBH plant design at Acheson and Glover allows to successfully operate in a 13-15 second cycle time on product with and without face mix.

KBH is a German based, family-owned company, a market leader in secondary processing and handling equipment for the concrete industry. KBH owns and operates a number of 3 paver/block plants and a gravel pit. Prior to industry launch KBH usually firstly installs the machines in one of their in-house plants to bring them to market maturity there. ■

FURTHER INFORMATION

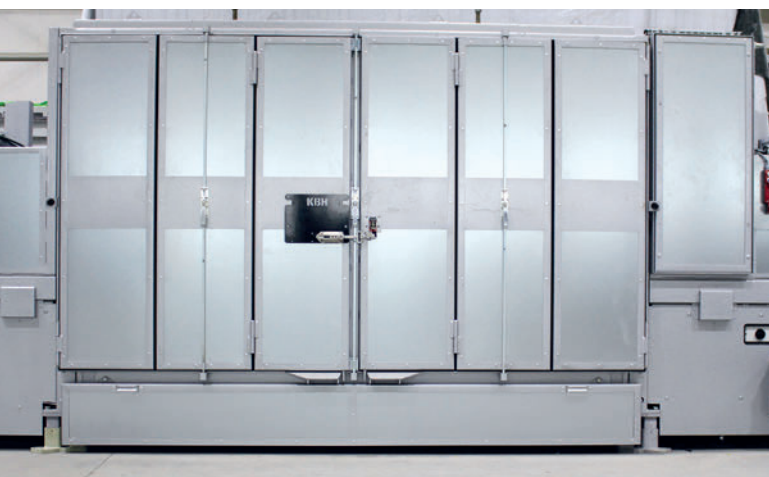


Acheson & Glover
64 Old Moy Road
Dungannon
Co. Tyrone, BT71 6PU, Ireland
T +44 28 87788112
www.ag.uk.com

® **KBH**

>> **MASCHINENBAU**

KBH Maschinenbau
Baustoffwerke Gebhart & Söhne GmbH & Co. KG
Einöde 2
87760 Lachen, Germany
T +49 8331 950315
maschinen@k-b-h.de
www.k-b-h.de



DW Machine encapsulation closed and open



Plasticizer-free drinking water lining system

نظام التبطين لمياه الشرب الخالية من الملدنات

In the Salzburg municipality of Zell am See, the aging elevated drinking water tanks have been renovated. Liot Kunststofftechnik GmbH, a company specialized in the rehabilitation of drinking water tanks, uses the drinking water lining system HydroCLICK produced by Agru Kunststofftechnik for this purpose.

في بلدية سالزبورغ في نسييل أم زيه، جرى تجديد خزانات مياه الشرب المرتفعة القديمة. وتستخدم شركة Liot Kunststofftechnik GmbH، وهي شركة متخصصة في إعادة تأهيل خزانات مياه الشرب، نظام التبطين HydroCLICK لمياه الشرب الذي أنتجته شركة Agru Kunststofftechnik لهذا الغرض.



One of the two chambers of the Fuchslehen drinking water reservoir rehabilitated with Hydro Click.

A total of 640 m² of Hydro Click sheets were expertly installed for the two chambers of an elevated tank. With this lining system, a lining made of PE80, tested for leak tightness, is installed in the existing water chamber.

The Hydro Click sheets with their non-porous and smooth surfaces ensure a safe and hygienic storage of drinking water. The spacer studs on the back serve as possible drainage for condensation and water ingress through the existing concrete structure.

Plasticizer-free material, approved for drinking water

The drinking water in the tank only comes into contact with polyethylene. The material polyethylene fulfils the highest demands with regard to food hygiene, mechanical strength and durability. This is because the thermoplastic material is physiologically harmless, odourless, tasteless and free of plasticizers. As the easy-to-clean Hydro Click lining is also permanently corrosion-resistant and permanently resistant to chlorination up to 3 mg/l.

Also the assembly is quick and safe. The system consists of a sheet with the Click and spacer studs, which are formed in the extrusion-calendering process, and the Click profile, which is matched to the Click studs of the plate. In addition, Hydro Click scores with short installation times, a clean and

safe assembly and permanently tight welded joints. Also the inspection of the drinking water tank is easier thanks to the blue surface. ■



The sheet joints are welded together by extrusion welding.

FURTHER INFORMATION



Agru Kunststofftechnik GmbH
Ing.-Pesendorfer-Str. 31
4540 Bad Hall, Austria
T +43 7258 7900, F +43 7258 2850
office@agru.at, www.agru.at

CONCRETE PROTECTION

AGRU-ULTRA GRIP® FOR THE ULTIMATE GRIP IN CONCRETE

HIGHEST PULL-OUT STRENGTH
50 % higher pull-out strength than
conventional concrete protection slabs

RESISTANT TO WATER BACKPRESSURE
Water backpressures of up to 1.75 bar
are permanently withstood

VERY HIGH NUMBER OF ANCHOR STUDS
420 anchor studs per m² are an integral
part of the liner

FOREVER SEALED SURFACES
>2200 N/stud shear resistance and 82 t/m²
pull-out resistance for maximum safety

WIDE RANGE OF PRODUCTS
Available in PE and PP in widths between
1500 mm and 5000 mm



The Plastics Experts.



   
@agruworld
www.agru.at



Flexbox: the adjustable lift shaft and box-culvert mould

نظام Flexbox: عمود الرفع القابل للضبط وقالب العبارة الصندوقية

Construx is one of Europe's leading mould manufacturers and developed over time a vast portfolio of moulds that suit precast manufacturers' needs. In close collaboration with the customer, Construx tries to find the most appropriate mould which is in accordance with all technical specifications, which fits the customers' budget and which copes with the dimensions and numbers of precast elements the customer wants to cast. For companies supplying box-culverts or lift shafts and stair cores, Construx conceived a fully adjustable formwork system, the Flexbox.

Construx هي إحدى الشركات الرائدة في مجال تصنيع القوالب في أوروبا وقد قامت بمرور الوقت بتطوير مجموعة متنوعة من القوالب التي تناسب احتياجات الشركات المصنعة للخرسانة الجاهزة. وبالتعاون الوثيق مع العملاء، تحاول شركة Construx الوصول إلى القوالب الأنسب التي تتوافق مع جميع المواصفات الفنية والتي تناسب ميزانية العملاء والتي تتوافق مع أبعاد وأعداد العناصر الجاهزة التي يريد العملاء صيها. وبالنسبة للشركات التي تقوم بتوفير العبارات الصندوقية أو أعمدة الرفع ومحاور السلالم، ابتكرت شركة Construx نظام قوالب قابل للضبط تمامًا، يُطلق عليها Flexbox.

Construx designed this new type of adjustable moulds to produce any type of shaft or core without ties through the concrete element. The system is suitable to make single and double lift shafts, stair cores and box culverts. The idea of the mould is to start with an adjustable base frame on which all components can be locked into position. The inside mould has four hydraulically retractable corners which, when connected without any infill panels, form the minimum shaft size. This size can be chosen at 1,200mm x 1,200mm, 1,000mm x 1,000mm or even at 900mm x 900mm.

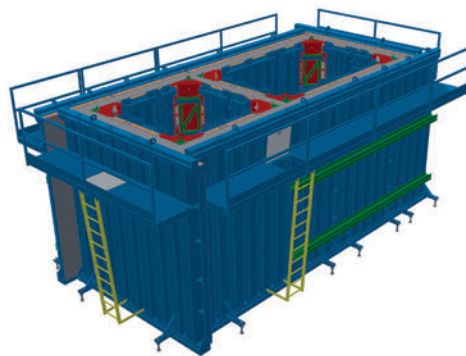
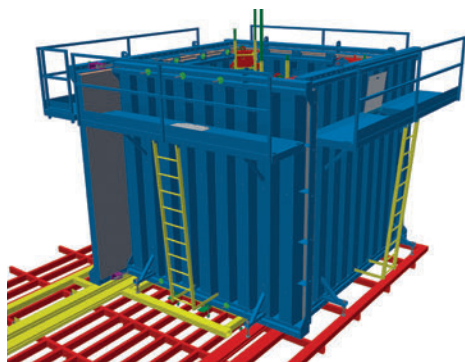
When adding infill panels in between the inside corners, any other internal size can be achieved. Increments can be 250mm or 10mm or anything in between. The retractable corners can feature a 90° angle (for lift shafts and stair cores) or can have a triangular chamfered corner (for box-culverts), or even a combination of chamfer and 90° angle. In case the mould is going to be used for lift shafts and stair cores as well as for box-culverts, the chamfered corners can have detachable top-up parts. The retractable corners can be operated by means of four individual hydraulic hand-pumps or with one single hydraulic group. Typical net heights of the moulds are 3m and 3,5m. By using modular inside and outside panels, the length and the width of the elements made in the moulds can be up to 7,5m x 4m, or even more.



Typical setup of a Flexbox mould

Shaping the future of concrete

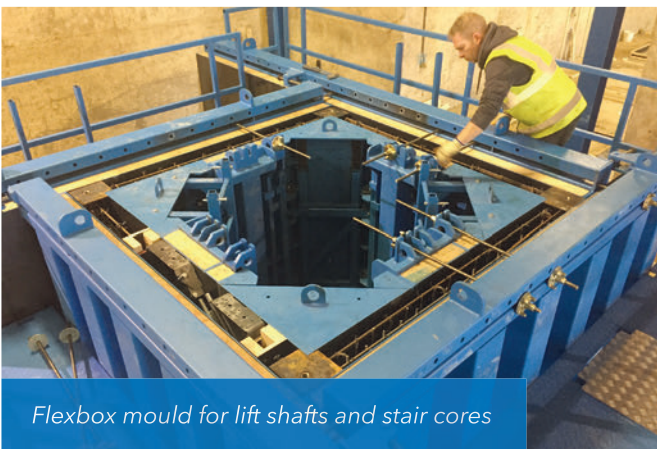
After assembling the inside mould, steel bases are fit onto the base frame and against the inside mould. These bases sit on height adjusters and can have different widths, allowing various wall thicknesses for shafts and culverts. The continuous height adjustment system allows to finish the concrete on top of the mould at all times. The bases can be flat (for lift shafts



Single shaft mould (left), double lift shaft mould (right)



Flexbox mould for box-culverts



Flexbox mould for lift shafts and stair cores

and stair cores) or have a rebate (for box-culverts). The outside panels connect to each other in a hit and miss configuration. By doing so, any outside size can be achieved, no matter the increments of the inside mould. Outside panels and inside panels are connected to each other with spindles at the base and by means of tie-rods over the top of the mould. So, there is no need for ties through the concrete element, which results in a fair-faced and watertight finish.

Construx meets the requirements of its customers, in order to obtain the most appropriate solution to manufacture their precast electrical substations. The outcome of achieving such an objective is a very satisfied customer. Construx is an engineering-driven manufacturing company relying on the commitment, creativity and experience of its employees. According to the company their aim is to establish a partnership, rather than to be a supplier, in providing turnkey solutions for precast and on-site formwork issues.

FURTHER INFORMATION



Construx bv
 Hazebeekstraat 11, 8531 Hulste, Belgium
 T +32 56724793
info@construx.eu, www.construx.eu



Precast Moulds & On-Site Formwork



Shaping the Future of Concrete

Hulste (B)	Hazebeekstraat 11
Genk (B)	Hulste, Belgium
Roeselare (B)	+32 56 72 47 93
Boortmeerbeek (B)	info@construx.eu
Veenendaal (NL)	
Bucharest (RO)	



New production facility at Litecast Precast



منشأة إنتاج جديدة في شركة Litecast Precast

Established in 1998, Litecast Ltd. has since become a leading manufacturer of precast concrete floor beams in the United Kingdom. They specialise in the design, manufacture and supply of precast concrete floor beams for use within a multitude of purposes. The rapport that they have established with their clients has been built up through many years of excellent service. With quick lead times for designs, quotations and materials they can ensure a prompt and efficient service from point of contact to delivery on site.

لقد تأسست شركة Litecast Ltd. في عام 1998، وأصبحت منذ ذلك الحين شركة رائدة في مجال تصنيع عوارض الأرضيات الخرسانية الجاهزة في المملكة المتحدة. وهي كذلك متخصصة في تصميم عوارض الأرضيات الخرسانية الجاهزة وتصنيعها وتوريدها لاستخدامها في العديد من الأغراض. وتُعزى علاقتهم الوثيقة التي أسسوا قواعدها مع عملائهم إلى سنوات عديدة من الخدمة الممتازة التي قدموها لهم. وبفضل فترات التنفيذ السريعة التي يعرضونها لإنجاز التصاميم وعروض أسعارهم وموادهم التي يستخدمونها، يمكنهم ضمان تقديم خدمة سريعة وفعالة بداية من مرحلة التواصل إلى مرحلة التسليم في الموقع.

All beams produced by Litecast are wet cast in precision moulds, providing a smooth finish and avoiding defects that are commonly associated with extruded beams. They manufacture beams in 25mm increments allowing versatility in designs. The pre-stressing at manufacturing stage provides beams with a robust structure, allowing beams to span substantial lengths. One of the company's main strengths is its ability to deliver materials within 3 to 5 business days from project order approval.

Expansion with a new facility

With the ever-increasing request for beams, in an extremely vibrant housing market, the directors in Litecast realised that they had reached their production capacity at their old facility. A decision was taken, that, in order for the business to grow, they needed to find a new location and create a new facility.

The location chosen is within the existing industrial estate at Pipers Lane, Nuneaton which is not too far from their old factory. This completely new facility would also allow Litecast to incorporate many new solutions which were not possible previously. Through its agent for the United Kingdom, PUK Services, Bianchi Casseforme srl have been involved in this project from the conceptual/planning stage right the way through to final installation and commissioning.

Litecast also purchased from Bianchi a Tilting Table to allow them to also supply themselves with 'wall panel elements' and ground beams which were being used in the construction of their new production facility.

At the beginning of 2020 an initial order was placed with Bianchi Casseforme S.r.l for the supply of four self-reacting and multi-stressing beam moulds and five dedicated machines which would enable Litecast to perform, removing



The multipurpose cleaning, de-moulding and transfer machines

Installation of the first four moulds and commissioning of the machines



many of the previous manual processes and replacing them by machines, in order to be more efficient. As the project progressed two additional self-reacting and multi-stressing moulds were added to bring the total number of mould to six. Started in 1964, Bianchi Casseforme Srl, is an expert partner in the design, manufacture and commissioning of plant and machinery for the precast concrete industry. The company is able to offer modern technological solutions, which are highly personalized and flexible to guarantee economic efficiency and ease of use in a continually changing market, while still respecting the needs of their clients.

Scope of the project - moulds

Five 200 ton self-reacting and multi-stressing beam moulds – each of these moulds has an effective length of 98m, with an external load beaming frame. The internal profile of each of these moulds is composed of profile bent steel plates to produce twelve T beams 150mm deep and 42/92mm wide. Under each mould finned heating pipes are positioned to evenly distribute the heat generated by the heating system as well as insulated sandwich panels which help to contain this heat. Each mould can produce 1,100m of T beam per

BUILDING THE PRESENT, LOOKING TO THE FUTURE

BIANCHI CASSEFORME. WITH OVER THAN 50 YEARS OF EXPERIENCE SERVING THE PRECAST INDUSTRY.

BLLI PARMA



Visit us at
ICCX
DIGITAL 365.
 digital.concrete.convention
www.iccx.digital



BRANCHES
 ITALY | SPAIN | FRANCE | INDIA | BRASIL

www.bianchicasseforme.it



Rotator stacker in operation

cast. The normally fixed end of the stressing head, has been designed to be removed, thus allowing them to be used to run the wires along each mould, in combination with the Multipurpose Cleaner Machine.

One 200 ton self-reacting and multi-stressing beam mould – although similar in construction to the other five moulds, this mould has an effective length of 90m, composed of profile bent steel plates to produce eight T beams 225mm deep and 82/136mm wide. Under this mould finned heating pipes are positioned to evenly distribute the heat generated by the heating system as well as insulated sandwich panels which help to contain this heat. The mould produces 720m per cast.

The total production capacity per cast cycle is approximately 6,200m. All the moulds are fed from a new batching plant and concrete distribution system along with casting machines which were supplied by MCT Italy

Machines (all running on steel rails cast into the floor running parallel to the moulds)

Multipurpose cleaning machine

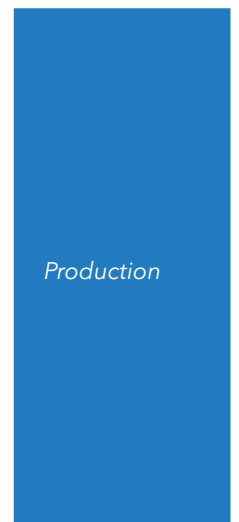
Based on a portal frame running on four electrically driven wheels including side protection panels and laser protection scanners, this machine performs three tasks in one single operation: running all the wires (a maximum of 48 wires) – this operation is achieved by two pneumatic cylinders that pick up the fixed head from the end of the mould and carries it to the stressing end of the mould, where all the wires are then fed through the fixed head and anchored in position; cleaning the moulds with a rotating set of brushes and a scraper for the larger items, a dust extractor and filter arrangement is incorporated; finally application of the release agent by means of dedicated nozzles, while moving over each mould in one single operation. All controls are by touch screen.

Beam de-moulder

Similarly based on a portal frame design including protective side covers this machine, battery powered, moves over each mould. With the use of twelve high tensile lifting hooks, and hydraulic cylinders it lifts the precast beams out of the mould using the exposed wire between each stop-end and places the beams on top of timbers above the mould. Located within the machine is a storage box for these timbers, once placed the beams are then ready to be cut.

Wire saw

Enclosed by sound absorbing material this electric powered portal framed machine, travels over each mould by four electric motors, equipped with a double blade with a diameter of 500mm mounted on a cross travelling guided set of tracks, and with the aid of a laser line indicator. In one single automatic operation it cuts all the wires exposed between two





The first four moulds installed

sets of beams (approximately 80mm wide). To stabilise the beams during cutting two sets of hydraulic cylinders apply downward pressure on the beams to stop them moving. Also forming part of this machines is a special device that ensures the beams are aligned and kept straight. All controls are by touch screen.

Rotator and stacker

Driven by four electrically driven wheels also mounted on a portal frame this piece of equipment has two independent longitudinal travelling motorised trolleys each equipped with hydraulic clamping fingers at each end, to grip all twelve beams and rotate them by 180°. Once rotated the machine then stacks the four beams one on another. Once each "stack" is complete, the machine picks up each stack and passes it on to the waiting trolley. With the aid of encoders, laser guides and video cameras the process is controlled by a PLC and this ensures the minimum amount of operator input/information to carry out these tasks. Beams of varying length from 1.5m to 6m can be stacked. Safety is taken care via a laser scanner which is constantly scanning and if there is a person or obstacle in the way of its travel the machine stops immediately.

Transfer trolley (battery powered)

This device has two functions - to move machines from bed to bed and also to take beams out of the factory. The machine is capable of lifting all machines mentioned above between all moulds and eliminates the need for an overhead crane making this a far safer process. The second function for this battery powered trolley is that it receives and transports elements that have been placed on it from the rotator and stacker. These stacks are then moved transversely and longitudinally out of the production hall whereby they are then lifted off by one of Litecast's side loaders and placed in the storage facility.

Bianchi has successfully ensured that the project and possibly one of the most modern production plants for the produc-

tion of T Beams was delivered to Litecast with minimal delays despite the problems that were encountered due to the ongoing Covid-19 Pandemic. Bianchi and PUK thank Litecast for their faith and support during challenging times and look forward to a long-lasting relationship with Litecast. ■

FURTHER INFORMATION



Litecast Homefloors
 Unit 1, Purley Chase Industrial Estate, Pipers Lane,
 Nuneaton CV10 0RG, United Kingdom
 T +44 02476 356 161
sales@litecast.co.uk
www.litecast.co.uk



Bianchi Casseforme srl
 Via G. Di Vittorio, 42
 43045 Fornovo di Taro (PR), Italy
 T +39 0525 400511
 F +39 0525 400512
info@bianchicasseforme.it
www.bianchicasseforme.it



PUK Services
 Unit 5, Gamma,
 Orchard Industrial Estate,
 Toddington, Cheltenham, Gloucestershire, GL 54 5 EB, United Kingdom
 T +44 (0)1789 721655
puk@pukservices.co.uk
www.pukservices.co.uk

Moldtech S.L., 41500 Alcalá de Guadaíra, (Sevilla), Spain

3D moulds for Saudi Vision 2030

القوالب ثلاثية الأبعاد لرؤية السعودية 2030

The Kingdom of Saudi Arabia launched in 2016 its strategic development plan called Saudi Vision 2030 which has the purpose of diversifying its economy from the oil sector and at the same time improve the living standards of its population. For this the plan foresees substantial investments in areas like health care, tourism, infrastructure and housing where the construction of 480,000 residences should be concluded before 2030.

أطلقت المملكة العربية السعودية في عام 2016 خطتها التنموية الاستراتيجية التي يُطلق عليها "رؤية السعودية 2030" والتي تهدف إلى تنويع اقتصادها من قطاع النفط وفي نفس الوقت تحسين مستويات المعيشة لسكانها. ولهذا الغرض، تتوقع الخطة ظهور استثمارات كبيرة في مجالات مثل الرعاية الصحية والسياحة والبنية التحتية والإسكان حيث يجب الانتهاء من بناء 480.000 مسكن قبل عام 2030.

The company Kattera was awarded a series of contracts for the construction of villas where the company is leading an innovation trend in the KSA building sector by using precast 3D technology. Moldtech, as one of the global leaders in the fabrication of 3D moulds, was selected as the exclusive supplier for these moulds.

The 3D moulds allow Kattera to precast the walls and floor of the bathrooms as a monolithic element after which the casted element is turned 180°. The precasted bathroom is then finished

at the Kattera premises in several steps which involve waterproofing, attachment of tiles, fixtures and so on.

So, the bathroom can be shipped to the building site almost "ready to be used". This methodology offers a series of advantages such as improvement of quality standards, increased control over the project duration and better project control as less people are required to work at the building site.

Moldtech supplied a total of 24 moulds in 2 different sizes: 12 moulds of 2.6 x 2.4 with height of 3.6 meters and 12



View of outer mould



Pouring of the concrete



Demoulding



Transfer to turning station

Element after 180° turn



View of casted element



moulds of 2.1 x 1.5 meters with a height of 2.8 meters. In both cases the wall thickness was 100mm. The inner core of these moulds includes a hydraulically retractable system thereby allowing to perform the de-moulding in a swift manner without the need for conical slope.

A total of 12 hydraulic units were delivered so each unit would control 2 moulds. The moulds also include door and window shutters attached to the outer mould to create the corresponding spaces in the casted element. The mould system is completed by an air vibration system and heating system where Moldtech provided a pre-installation for Kraft heat diffusers. In addition to the moulds, Moldtech also delivered 2 turning devices which turn the element a total of 180° and have a weight capacity up to 20 tons. These turning devices can also be used for turning other types of 3D elements such as underground vaults and Moldtech makes them in a variety of capacities up to 50 tons.

A last advantage of the 3D mould system is its mobility as it is relatively easy to move the moulds and the turners from one production site to another which gives the client Katerra increased production flexibility when bidding for future projects.

FURTHER INFORMATION



Moldtech S.L.
 C. Polysol Uno 40, P.I. Piedra Hincada
 41500 Alcalá de Guadaira, (Sevilla), Spain
 T +34 955 444 190
info@moldtechsl.es, www.moldtechsl.es

www.moldtechsl.es
info@moldtechsl.es
 +34 955 444 190



THE BEST PLACE TO REST YOUR CONCRETE



Catalogue of products



Technologies of the future for the world of today



Second modular housing plant successfully put into operation in Peru

تشغيل وحدة الإسكان المعيارية الثانية بنجاح في بيرو

The success story in Peru 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 planning and production technology from Germany.

قصة النجاح في بيرو مستمرة. إن السكن ميسور التكلفة والمريح والأمن لتلبية الطلب المتزايد على مساحات المعيشة - هو ما يسعى إليه مطورو المشاريع والحكومات الوطنية في العديد من مناطق العالم. تضطلع شركة Llaxta بدور الريادة في بيرو. فقد نمت الشركة من شركة ناشئة إلى شركة من أهم شركات التطوير العقاري في البلاد في السنوات العشر الماضية - وذلك بفضل تكنولوجيا التخطيط والإنتاج من ألمانيا.

The success story began about ten years ago 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 ten 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.

The successful concept is now being transferred to other parts of the country. At the beginning of 2021, the second modular housing factory 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 m², divided into living room/kitchen, bedroom and bathroom.

It is offered in a complete package consisting of the house on a plot of 72 m², as well as electricity, water and drainage. The houses are subsidized up to 80 % by government interest-free loans granted by the Ministry of Housing for low-income families. The home can still be expanded later on the associated land plot as needed by the residents. This project is also ambitious: more than 20,000 homes will be built and are intended to offer residents a higher quality of life.

Reymann Technik was again appointed as planning office and general contractor, adapting the concept of the first plant and further developing it from the experience gained in the previous project.



Already the second precast modular house factory has gone into operation in Peru.

Online-Assembly

The formwork and pumping technology was again provided by Ratec. The equipment includes two room module moulds adapted to the new house design, a battery system for the production of interior walls and two roof moulds for the flat roof. Together with the pumping technology, a UPP100 pump car from Ratec, and the components for the mixing plant and concrete laboratory, the equipment was delivered as early as mid-2020. Due to travel restrictions imposed by the ongoing COVID-19 pandemic, the assembly work could not start by Ratec's technical project management team as scheduled. Instead, an online assembly was used, where the customer's technicians were able to assemble most of the equipment under the guidance of the project engineers from Germany using detailed drawings, live video and chat. It was only thanks to this cooperation and creative problem-solving skills from both sides that this exceptional approach succeeded.



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



Product catalogue

MEET THE BETTER



For 25 years leading in magnetic formwork technology for precast concrete production. In the development and production of intelligent magnetic formwork components and complex formwork solutions we set global standards.

With our know-how from intensive development work in close cooperation with our customers worldwide, RATEC has the right answer to every conceivable shuttering situation. Our solutions are not only technically well-engineered, but they also take into account economic feasibility, efficiency and process optimisation.

Benefit from our experience, flexibility and creativity – MEET THE BETTER IDEAS!

Phone: +49 6205 9407 29
info@ratec.org | www.ratec.org

RATEC
MEET THE BETTER IDEAS

PRECAST CONCRETE ELEMENTS

At the end of 2020, the assembly could finally be completed by one of Ratec's engineers on site.

Production is now running at high capacity to catch up with the backlog of 4,000 housing units already sold. Two room modules can be produced per mould and day, resulting in four houses per day.

Special characteristics, that speak for upcrete

Production of a room module in installation position is rather the exception in precast room module production, but carries specific advantages. One of them is avoiding the turning process. At the same time, pressure filling ensures optimum spreading of the concrete in the mould and thus an excellent surface quality on all sides.

Due to the greater room dimensions of 7.15 x 3.54 m with a height of 2,60 m in this project, the modular moulds had to be designed more stable in order to withstand the concrete pressure without risking deflection. During the filling procedure, the 35 t shrinking core is pressed upwards with a force of about 150 t, counteracted by the robust bracing of core and outer panels on top of the mould.

The wall thicknesses are also particularly narrow with 80 mm, which is another reason to opt for pumping with upcrete.



Roofing ceremony for the first module

A promising concept under the right conditions

Llaxta's two modular housing plants are unique not only in South America, but worldwide. There is great interest in other regions for similar concepts. But the feasibility for Modular Housing with upcrete is linked to certain framework conditions:

- The climate profile should be within a temperature corridor of no more than 20 degrees temperature differ-

BESSER
Trusted Since 1904



Vibro-Mac® Dry Casting Machine

Responsive. Reliable. Versatile.

+1.989.354.4111 | besser.com | sales@besser.com



Finished house - more than 20,000 homes are to be built here.

ences in order to build without insulation. If insulation is necessary, the construction method of choice should be subject to thorough evaluation. A detailed consideration and analysis is substantial part of a feasibility study.

- The availability of raw materials for the production of a suitable self-compacting concrete (SCC) should be ensured.
- The distance from the factory to the construction site and the conditions for transportation for the size of the room modules and their weight should be given. Distances up to 50 km have been tested and proven feasible in Ica so far.
- The house concept and architecture should ensure a high degree of standardization to be able to offer different house types with few components. They should correspond with regional conditions and the needs of future residents. The simultaneous planning with an architect and plant engineer together would be the ideal case.

Overall, under the right conditions Modular Housing with upcrete is a promising concept, especially in regions with a high demand for affordable housing.

The advantages are evident:

- Standardized construction process;
- optimized use of materials;
- conservation of resources;
- qualification of work in the plant through consistent processes and methods - an advantage especially in countries with a low skilled labour force;
- rapid completion of housing units thanks to modular construction method;
- high quality of concrete elements, reducing the need for rework through the use of upcrete pumping technology.

With the first project in Peru, a vision became reality. The completion of the second modular house factory now demonstrates the sustainable success and economic efficiency with the right production solution, supported by the vision of creating a higher quality of life for people by creating affordable living space. ■



The pump car provides the individual moulds via rail tracks with concrete from the mixing plant.



Scan the QR code and watch the video about this modular housing project in Peru.



FURTHER INFORMATION



Llaxta S.A.C.
Manuel Olguin 335, oficina 906, Surco, Santiago de Surco, Lima, Perú
+51 1 419-9500
info@llaxta.com, ventas@llaxta.com, www.llaxta.com



Reymann Technik GmbH
Karlsruher Str. 32, 68766 Hockenheim, Germany
T +49 6205 9407 0, F +49 6205 9407 20
info@reymann-technik.de, www.reymann-technik.de



MEET THE BETTER IDEAS

Ratec GmbH
Karlsruher Str. 32, 68766 Hockenheim, Germany
T +49 6205 940729, F +49 6205 940730
info@ratec.org, www.ratec.org



Boost a hollow core plant

رفع كفاءة المصنع الرئيسي المجوّف

With software, automation, and independent machinery a production plant can be boosted to be an intelligent plant with many benefits. After the challenging year 2020 and a 2021 heading on like the old one, Echo Precast Engineering wants to give some insights on about how to boost hollow core plants to make life a little easier for their clients in the industry.

يمكن رفع كفاءة مصنع الإنتاج ليصبح مصنعًا ذكيًا يتسم بالعديد من المزايا من خلال الاستعانة بالبرامج والتشغيل الآلي والماكينات والمعدات الآلية المستقلة. وعليه، بعد عام 2020 الصعب المليء بالتحديات وعام 2021 الذي بدأ مثل العام القديم، تريد شركة Echo Precast Engineering تقديم بعض الرؤى والأفكار بخصوص كيفية رفع كفاءة المصانع الرئيسية المجوّفة لتسهيل الحياة قليلًا لعملائها في قطاع الصناعة.

But why is boosting a hollow core plant a good investment? In a nutshell: To increase efficiency, safety, and profit as well as save time, raise productivity, and have full control of the production.

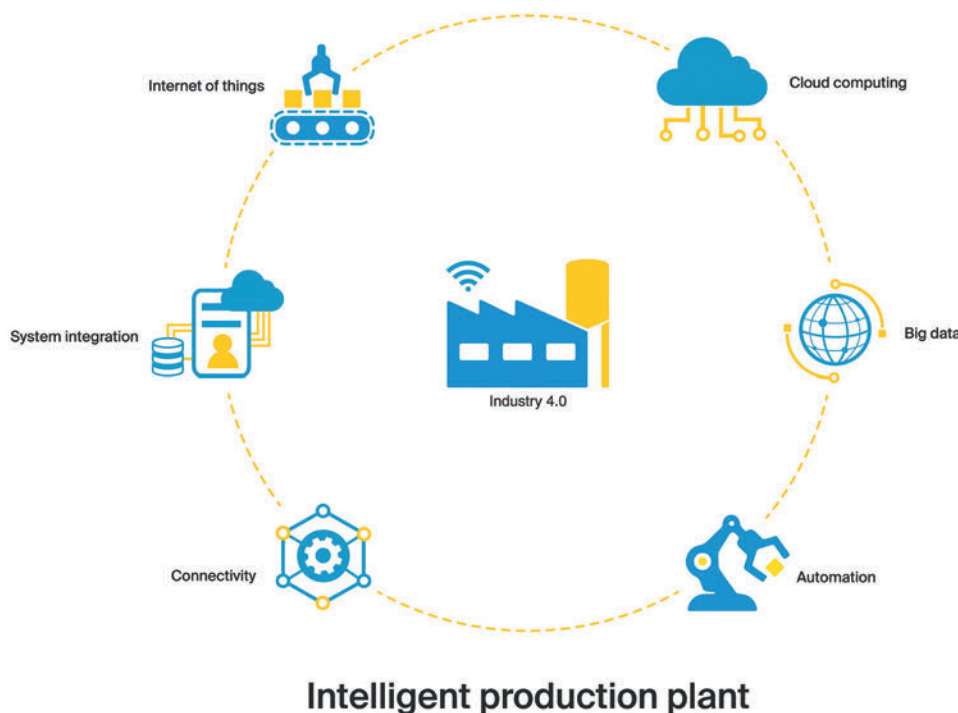
An intelligent production plant is a highly precise and accurate production site that has digitised the planning, production, and storage processes. These benefits allow an organized, controlled, and efficient production from start to finish. This is possible through integrating technology of the "industry 4.0" concept as internet of things, system integration, connectivity, automation, big data, and cloud computing. To achieve this, you do not have to start from scratch. If you already have a working plant, you can gradually upgrade technology.

How to boost a hollow core plant? Adding these solutions to the production process:

- Independent battery driven machinery for the production process
- Automation
- Software Automation at its best

Independent machinery

An independent machine is a battery driven machine. Battery driven machines have many benefits with social distancing being the most current, as well as of course, no cable which is benefiting the safety and no fumes which is healthier. Additionally, the reduction of downtime and staff is saving time and money.



Components of an intelligent precast production plant



Fresh concrete saw / transport wagon / multi-functional trolley

At Echo Precast Engineering they have very dynamic battery powered machines: The Smart Jet automatic plotter, the fresh concrete saw, the multi-functional trolley, and the transport wagon.

The special FCS saw to cut bars in the fresh concrete for example is additionally saving drastically on saw blades, as it does not need that many changes. The machines are more accurate, wireless, and independent.

With a multi-functional trolley, you can clean the production beds, spray oil on the production beds (release agent) and pull the strands/wires within approximately 45 minutes. The transport wagon brings the finished prestressed element to storage. It has the capacity of 30 to 60 tons.

Higher automation

With higher automated machinery you don't need an operator for each machine, so the automation saves space and resources with less handling and less people in the plant. All this with a higher output as well as efficiency and with less errors.

That of course means that if you want to succeed in the usage of automatic machinery, your team will need to learn new skills to control planning and the machines. Echo will train the team to use all the advantage of the machinery.

The details are making the difference. A good example is the Smart Jet plotter, which has safety and anti-collision sensors for additional security measurements. The Smart Jet can also plot with regular ink or special UV ink and the automation helps to avoid many mistakes happening during the making of slabs. Also, the state-of-the-art sawing machines (RAS & MAS) are fully automated. They detect the lines made for the plotter and can run completely independent. Those machines as well include anti-collision sensors ensuring a maximum for security of the people working in the plant.

Software as the glue of the intelligent plant

No automation without functioning software. Software connects the machines to each other. For example, it is possible to synchronise the work of the extruder X-liner, the plotter Smart Jet and the multi-angle saw machine to work autonomously on a production line.



It is possible to synchronise the work of the extruder X-liner, the plotter Smart Jet and the multi-angle saw machine to work autonomously on a production line.

With the "Industry 4.0" concept, all sub-areas can be linked, and consistent transparency is guaranteed. In the precast concrete industry, the concept includes bidirectional linking of production machines with production planning and with the BIM model.

Intelligent systems enable a smart production that supports the employee in the best possible way. The employee can access the software from everywhere to control and edit data if it is necessary.

Progress Software Development a company dedicated to creating software solutions for the precast concrete industry, is also a member of the Progress Group. One of their creations is ebos®, a comprehensive solution for work preparation, production, and process analysis. It addresses all aspects of the manufacturing process, from start to finish.

Echo Precast Engineering recommends to also use stabos, which is well known and can maintain and connect all data and information regarding the machines and result in predictive maintenance and outcome, accessible from everywhere.



stabos is a software for the collection and evaluation of production data



PROGRESS GROUP sponsored the free download possibility of the pdf of this article for all readers of CPI. Please check the website www.cpi-worldwide.com/channels/progress-group or scan the QR code with your smartphone to get direct access to this website.



FURTHER INFORMATION



PROGRESS GROUP

Echo Precast Engineering NV
 Industrierrein Centrum Zuid 1533
 3530 Houthalen, Belgium
 T +32 11 600 800
info@echoprecast.com
www.echoprecast.com



PROGRESS GROUP

Progress Software Development GmbH
 Julius-Durst-Straße 100
 39042 Brixen, Italy
 T +39 0472 979159
info@progress-psd.com
www.progress-psd.com



COMPLIMENTARY REGISTRATION AND ATTENDANCE FOR INDUSTRY PROFESSIONALS

ICCX INTERNATIONAL CONCRETE CONFERENCE & EXHIBITION
DIGITAL 365.4
 digital.concrete.convention

WORLDWIDE. ANYTIME. 365.
 INDIVIDUAL BOOTHS.
 QUARTERLY LIVE. ALWAYS ON DEMAND.



The ICCX - International Concrete Conference & Exhibition expanded its range of events by offering a new digital meeting platform. ICCX digital 365. is an online event available worldwide, all around the clock, 365 days per year. ICCX digital 365. "live days" provide for industry professionals the opportunity for live communication. There are many exciting opportunities that can be realized in the digital world of ICCX digital 365. digital.concrete.convention.

ICCX - INTERNATIONAL CONCRETE CONFERENCE & EXHIBITION

Sponsors



Organisation



www.iccx.digital

Elematic, 37801 Akaa, Finland



How to modernize an old factory in under a year

كيفية تحديث مصنع قديم في أقل من عام

Santalan Betoni decided to make a bold investment by resurrecting an outdated factory building in Raasepori, Finland, to bring it up to standard for modern precast production. This turnkey project with Elematic started a new era of wall element production in the facility last year.

قرر سانتالان بيتوني القيام باستثمار جريء من خلال إحياء مبنى مصنع قديم في مدينة رأسيبوري، فنلندا، لرفع مستواه والارتقاء به إلى المستوى القياسي لإنتاج الخرسانة الجاهزة الحديثة. وبدأ هذا المشروع الجاهز للتشغيل مع شركة Elematic حفة جديدة من إنتاج عناصر الجدران في المنشأة العام الماضي.

When Mikko Lahti, CEO of Santalan Betoni, looks around the old factory building and reviews the details of the factory's current capacity, production pace and new layout, he has good reason to be content. There are 26 casting tables inside the building, and the factory produces between 20 to 40 precast concrete elements every day, depending on the degree of difficulty and equipment needed. This brings the refurbished factory's capacity to over 200 000 m² per year. "The system is now flexible and agile, so we can make complex elements in addition to simple ones. The central wagon line we have here does not restrict flow around the tables, so they can be placed freely. Manufacturing more difficult elements does not slow down the end of the line at all," Lahti says.

Two years ago, the scene was very different:

"This was a very old-fashioned factory and we were wondering what to do with the property, whether to sell it, to tear down half the plant, or to rethink production in a totally new way. Extensions have been added to the building many times in the past, so using the space was tricky, since there were many pillars and beams inside."

The old hall, which was about a hectare big, had about 6000-7000 m² of warm space, and the rest of the area was dedicated to outside warehouse space. Building a new system inside the old building was a great challenge. But Santalan Betoni got help from a structural engineering company and



Overview about the Santalan Betoni plant

Fact Box

Santalan Betoni

Established in 1971, based in Hanko, Southern Finland. The new factory in Raasepori began production in 2019. Staff: about 75 (40 workers in Raasepori factory; 25 in Hanko factory; 10 people in offices or in processing of stone aggregates in Leksvall, Tammisaari). Main lines of business: manufacturing precast concrete elements and ready-mixed concrete, earth work, processing of stone aggregates. Casting tables: 26 in the Raasepori factory and 9 in the Hanko factory. Daily capacity: between 20-40 elements per day (mainly wall elements, solid slabs, sandwich walls, pillars and beams) in the Raasepori factory. Annual production capacity: over 200 000 m² per year in Raasepori. Ongoing projects: residence buildings, schools, warehouses, metro stations, and other civil engineering projects.



Casting concrete elements

decided to bring the old factory to life again. To achieve this, the pillar spacing had to be changed and the beams lengthened.

“We visited a few factories in Europe and got some ideas for a new layout,” Lahti says.

Fast and easy turnkey delivery

The company needed to find a supplier for a wall production line. They gave a few suppliers an idea of the new factory layout which they could base an offer on.

“In the end, we chose to work with Elematic. Not only was communicating with them was easy, they had a reputation for trustworthiness, and they had good references. In addition,

we could go and see their casting machines in action before signing the contract, which was important for us. Machine maintenance, technical support and price were also deciding factors,” Lahti says.

The updated precast factory was equipped with a new central wagon line because it was the best choice for the space. The system enables free placement of the casting tables, and when time-consuming elements are being manufactured, tables can be moved away from the line, thus avoiding bottlenecks.

The turnkey delivery from Elematic included a Comcaster casting machine, vibrating stations, a floating machine for finishing, a brushing and cleaning station, tilting stations, curing stations, outpulling wagons, and a mesh welding machine.



If the future could choose, it would run greener processes with green equipment. With the help of Elematic precast production technology and experts, you can make your processes not only more productive and cost-efficient, but also save energy and resources.



Visit our new website!



THE FUTURE RUNS GREEN





Plant supervisor with a good overview about the plant

“Elematic was flexible and inventive with the layout, shaping their system according to our requests. The sizes of the tables have been maximised. With so many pillars inside the building, we had to make the most of the space we had. In the tightest case, only 10 millimetres separate a table from a pillar. Every detail has been taken into account,” Lahti observes. The delivery also included planning and installation work. “Getting all this from one supplier was a great benefit. It made things easy for us,” he says.

Projects to renew old plants like this always include challenges, but Lahti is happy about the straightforward way in which problems were solved by Elematic’s project manager. Completing the turnkey project took only ten months.

“Ten months is a very short time considering that a fully equipped plant had to be installed in an existing space. This project was definitely not an easy one, but the collaboration with Elematic was smooth. Having to communicate with just the project manager, who organised everything for us was great. We did not need to find people to do different jobs for us. We feel like we got what we ordered. The machinery works well and everything was delivered on time,” Lahti concludes. ■

FURTHER INFORMATION



Elematic
 Aiolantie 2
 P.O. Box 33
 37801 Akaa, Finland
 T +358 3 549511
 F +358 3 5495300
info@elematic.com
www.elematic.com



Oy Santalan betoni - Sandö Betong Ab
www.santalanbetoni.fi

Progress Maschinen & Automation AG, 39042 Brixen, Italy



Successful installation of mesh welding plant in Australia during pandemic

التشييد الناجح لمصنع لحام شبكي في أستراليا أثناء الجائحة

In 2020, Euro Steel was established as the primary supplier of the reinforcing needs to the Euro Precast QLD business by introducing a new mesh welding plant with a bending machine supplied by Progress Maschinen und Automation, a company of the Progress Group. Despite several restrictions and high safety measures, Progress Maschinen und Automation, in close cooperation with the client, managed to set up the plant and provide a full service even during a pandemic. The message from Euro Steel was clear: Progress is a safe partner and will make this happen. Opened at the end of 2020, Euro Steel now looks to supply to and support the construction industry beyond precast.

في عام 2020، جرى إنشاء مصنع Euro Steel كمورد رئيسي لاحتياجات التقوية والتدعيم للأعمال التي تنفذها شركة Euro Precast QLD وذلك من خلال تأسيس مصنع لحام شبكي جديد يتوافر به آلات ثني مقدمة من شركة Progress Maschinen und Automation، وهي شركة تابعة لمجموعة شركات Progress Group. وبالرغم من العديد من القيود وإجراءات السلامة العالية، تمكنت شركة Progress Maschinen und Automation، بالتعاون الوثيق مع العميل، من إنشاء المصنع وتقديم خدمات كاملة حتى أثناء فترة الجائحة. لقد كانت الرسالة من إنشاء مصنع Euro Steel واضحة: شركة Progress شريك آمن وستحقق ذلك الأمان لديك. وبعد افتتاحه في نهاية عام 2020، يتطلع مصنع Euro Steel الآن إلى إمداد قطاع صناعة التشييد والبناء ودعمه بما هو أكثر من الخرسانة الجاهزة.

Australian precast industry reinforced with automation

Precast has always been a highly recognized construction method within the Australian construction industry. As the cost of labour increases, the construction industry constantly reviews the market for innovation and new technology to minimize onsite labour. For this purpose, the highly automated mesh welding plant was the first choice for Euro Steel. The M-System mesh welding plant allows for the production of mesh up to N20 and the integrated bending system BGM

allows for fully automated bending of the mesh into complete reinforcement cages. The main feature of the system was the ability to create mesh for precast solid walls through an automated process.

Mr. George Spiropoulos, Director of Euro Precast and Euro Steel points out the importance for automation in the precast and reinforcement industry in Australia: "The mesh welding plant is a fantastic machine which allows the production of larger bar meshes without the use of labour. The accuracy and quality of the product is something that labour cannot produce alone."



In December 2020 the plant has been officially opened by Hon Mark Bailey, Minister for Transport and Main Roads of Queensland.



Working from Coil reduces not only material costs, but also human resources needed and thus financially benefits the production.



Finished rebar labelled and prepared for transport to be used in precast elements by Euro Precast.

M-System Mesh welding plant

Fully flexible production of tailored mesh containing any combination of lengths, widths, wire diameters and pitches are the key advantage of the M-System mesh welding plant. Consisting of three main components: the MMR straightening unit, the fully flexible welding gantry as well as the BGM wire bending machine, the plant creates a continuous flow of production. Each phase of production is based at a separate workstation, working independently of one another but aligned through customized software.

The MMR straightening system with rotor straightening technology features 8 electrically driven rotors each equipped with five staggered straightening dies. The Progress rotor straightening technology ensures constant straightening results and very high processing quality of all steel types in compliance with even the most severe standards thanks to the principle of using separate wire feeds per wire diameter. Wire changeover is performed fully automatic within a few seconds and all wire diameters are permanently clamped into their own rotor available just-in-time.

The additional BGM wire bending machine, which can work with wire-diameters up to 16 mm, is an efficient, flexible bending machine, electro mechanically operated for the automatic production of three-dimensional mesh such as cages to an exact size. The machine is equipped with a rapid clamping system for the removable of bent mesh.

The welding gantry is carrying out the mesh welding, which is computer controlled and thus assures precise welding in combination with efficient energy consumption. Euro Steel benefits from the many advantages of highly flexible mesh production: tailoring mesh to fit static requirements through variable bar placement and diameters; eliminating material waste; eliminating greatly reducing manpower requirements; reduction of lead times, logistical effort, and storage costs.

The process control system and the management software Profit from Progress Software Development, also member of the Progress Group, ensures the optimal planning, control, and production. It allows for all the production jobs to



The fully installed plant.

be planned and monitored remotely. Thanks to the PTS test service unique to progress, every product can be tested in a virtual environment before sending it to the machine. This is particularly valuable with complex products such as customized mesh and cages. In case of an error in the drawing, the software will recognize it and send a warning as well as suggestions for how to eliminate the error. This guarantees that no time is lost during the actual production process. With the stabos unit, which offers statistical information, the production can be monitored even more efficiently, and long-term inefficiencies can be effectively eliminated. The machine software controls the whole production process from the coil to the finished mesh and thus allows for minimal manpower to be used.

Challenging times lead into a bright future

“The overall experience with Progress has been exceptional. From the planning phase through to commissioning, the professionalism of the Progress team is amazing. Understanding the large financial investment in such machinery, it is important to know that a company supplies and supports its product in a way that the customer is left satisfied”, says Mr. Spiropoulos and adds: “Progress has done this for me and the business.”

FURTHER INFORMATION



Euro Precast (QLD) Pty Ltd
 451 Sherwood Road
 Sherwood QLD Australia, 4075
 T +61 7 3278 2725
chris@eurosteel.com.au
www.europrecast.com.au



PROGRESS GROUP

progress Maschinen & Automation AG
 Julius-Durst-Straße 100
 39042 Brixen, Italy
 T + 39 0472 979100
info@progress-m.com
www.progress-m.com



PROGRESS GROUP

Progress Software Development GmbH
 Julius-Durst-Straße 100
 39042 Brixen/Italy
 +39 0472 979-900
info@progress-psd.com
www.progress-psd.com



PROGRESS GROUP sponsored the free download possibility of the pdf of this article for all readers of CPI. Please check the website www.cpi-worldwide.com/channels/progress-group or scan the QR code with your smartphone to get direct access to this website.



Landmark plant delivery into UAE

تسليم مصنعًا بارزًا إلى الإمارات العربية المتحدة

Lintec & Linnhoff has revitalised its operations in the Middle East in recent years, with new distributor partners and a new local leadership team offering customers a vastly improved sales and service experience. The company's investment in the region has been steadily paying dividends, the latest example of which is a first delivery of a Eurotec 4ECO120T model in the United Arab Emirates.

أعدت شركة Lintec & Linnhoff إحياء عملياتها في الشرق الأوسط في السنوات الأخيرة، وذلك بالتعاون مع شركاء توزيع جدد وفريق قيادة محلي جديد يقدم للعملاء تجربة مبيعات وخدمة محسنة بشكل كبير. ولقد كان استثمار الشركة في المنطقة يوتي ثماره بثبات، وآخر مثال على ذلك هو عملية التسليم الأولى لنموذج Eurotec 4ECO120T في الإمارات العربية المتحدة.

The sale is also notable because the plant is the largest model in the popular ECO range, underlining the ongoing high demand for concrete in Middle East. The UAE is home to other high capacity units from Lintec & Linnhoff, including a powerful Eurotec MZ6750Ti model, a stationery concrete batching plant with an impressive 200 m³/h output.

Tony Chakra, Area Sales Manager for Lintec & Linnhoff (Middle East and North Africa), said he was delighted with the delivery of the first Eurotec 4ECO120T model in the UAE, even more so as the deal was concluded entirely online: "It is very unusual for a machine of this scale to be sold entirely online, but with today's communication technology especially in the current climate, we were able to successfully perform the entire transaction virtually," he said. "Usually, we would host the

customer at a jobsite to view a similar plant in action and also conduct several face-to-face meetings. However, with the ongoing COVID-19 restrictions this was just not possible. Nevertheless, the customer is happy with everything so far and we will be providing comprehensive local support to ensure the customer enjoys the productivity benefits of the Eurotec ECO range right from the start."

The Eurotec 4ECO120T model is a great design for the Middle East, with its high-capacity output, galvanised steel structures, and reliable componentry from European brands. Design features include a Europe-built Twin-Shaft Mixer and cumulative aggregate weighing & batching sequence which help the unit achieve a rated capacity output of 120 m³ of concrete per hour with 3 m³ output per batch.



Lintec & Linnhoff continues its proud legacy of sales into the UAE, with the delivery of the first Eurotec 4ECO120T model in the country.



The Eurotec 4ECO120T model is the flagship plant in the brand's ECO concrete batching plant range.

The plant is the flagship of the Eurotec ECO series, which offers simple and functional concrete production solutions and are very good for customers requiring an economical batching plant which can simultaneously deliver a large quantity of high-quality concrete. All its weighing systems are metered via load cells and managed through Eurotec's unique, proprietary ECS process control system software which runs on a user-friendly Windows OS for fully automatic operations.

Tony Chakra said the addition of the Eurotec plant will help the Abu Dhabi-based concrete readymix supplier better serve its local customer base. "We continue to see growing demand for building materials across the Middle East, so the addition of the Eurotec 4ECO120T model will help the customer increase its capacity," he said. "This new Eurotec installation is the first of its type in the UAE and will give the company a competitive advantage through its high-volume efficient production. As Abu Dhabi's commercial sector continues to grow the customer is now well-positioned to play an important part in driving the ongoing success of the UAE."

Lintec & Linnhoff has a long history in the UAE stretching back decades and an established fleet of around 20 Lintec, Linnhoff and Eurotec asphalt and concrete plants spread across several customers. With new regional leadership and a revitalised sales organisation, the company is ready to kickstart a new era in its local history.

"Although we have rebooted our presence in the Middle East, we are not new here and in fact have a longstanding history. We understand the needs of customers and we have the infrastructure to support them. With our new market presence combined with our proven track record of strong technical support we believe Lintec & Linnhoff has a very bright future in the Middle East," concluded Tony Chakra. ■



Tony Chakra, Area Sales Manager for Lintec & Linnhoff (Middle East and North Africa)

FURTHER INFORMATION



Tony Chakra
Regional Manager - Middle East and Africa
Lintec & Linnhoff Maschinen Pte Ltd
T +961 71195440
tony.chakra@lintec-linnhoff.com
www.lintec-linnhoff.com

ADVERTISER'S LIST

Afinitas, www.afinitas.com	17	KTI Plersch, www.kti-plersch.com	23
AGRU Kunststofftechnik GmbH, www.agru.at	49	Masa GmbH Andernach, www.masa-group.com	C2
Badin Block srl, www.badinblock.it	33	Moldtech Moldes S.L., www.moldtechsl.es	5 7
BESSER COMPANY, www.besser.com	39, 60	PAUL Maschinenfabrik GmbH & Co. KG, www.paul.eu	13
BIANCHI CASSEFORME S.R.L., www.bianchicasseforme.it	53	Pemat Mischtechnik GmbH, www.pemat.de	21
BRECON Vibrationstechnik, www.brecon.de	43	PRENSOLAND, www.prensoland.com	5
CDS Group, www.cds-concrete.com	27	Progress Holding AG/SPA, www.progress-group.info	C4
Construx bvba, www.construx.be	51	RATEC GmbH, www.ratec.org	59
Elematic Oyi, www.elematic.com	67	SAMJUNG, www.samjungltd.com	41
HS Anlagentechnik, www.hsanlagentechnik.com	27	Techmatik SA, www.techmatik.pl	C1
KBH, www.k-b-h.de	45	TopWerk Middle East FZE, www.topwerk.com	25, 29
KOBRA FORMEN, www.kobragroup.com	37		



SUBSCRIPTION



Subscribe today and do not miss a single copy!

www.cpi-worldwide.com



ICCX WESTERN EUROPE 2021

03-04 November 2021
Maritim Hotel Bonn
Bonn, Germany



REGISTER FOR THE NEWSLETTER:
www.iccx.org/newsletter



ICCX Western Europe, returning to the venue of the first CPI Congress in 2001, will offer unique networking opportunities to precasters and concrete manufacturers in Western Europe, especially in Germany and the Benelux countries. While the conference program will provide hands-on information that will help to improve daily work in manufacturing facilities, the trade exhibition, with 100+ exhibitors, will showcase the products and service portfolio of the leading suppliers of the industry.

ICCX - INTERNATIONAL CONCRETE CONFERENCE & EXHIBITION

Platinum sponsor



Gold sponsors



Silver sponsors



Organisation



Mobility partner



Partner



www.iccx.org



BIG 5 DUBAI
12. – 15.09.2021
visit us at booth **8C351!**

COMPLETE PRECAST TECHNOLOGY WORLDWIDE

- Highly automated and customized carrousel plants
- Reinforcement machinery and mesh welding plants
- Battery moulds, tilting tables, various mould systems
- Slipformer, Extruder, equipment for production on beds
- In-house precast production and in-house testing plant
- Software for machinery and complete ERP systems

www.progress-group.info