

FORUM

51

THE WIRTGEN GROUP

MAGAZINE

www.wirtgen-group.com

01/2016

Impressive presentation

The WIRTGEN GROUP at bauma 2016.



WIRTGEN / VÖGELE / HAMM / KLEEMANN / BENNINGHOVEN



**"Today, we cover the entire process cycle -
from crushing and screening, through mixing,
paving and compaction to rehabilitation."**

Dear customers, staff and friends,

Being the leading international trade fair, bauma has always served as a benchmark for the industry and been an event of special importance for our company. From the very beginning, we presented ourselves as the innovation leader and celebrated our closeness to the customer. Step by step, we were able to present the milestones in our family-run company's development in Munich.

In 2016, with Benninghoven aboard, we clearly presented ourselves for the first time as a complete supplier for the entire process chain in road construction – from crushing and screening, through mixing, paving and compaction to rehabilitation.

Road technologies are our passion

Our premium product brands focus entirely on their respective core competences. This strategy has enabled us to attain the top position in cold milling, cold recycling, concrete paving, asphalt paving and asphalt compaction. Being the No. 1 is an obligation and we take our market leadership in the field of road technologies very seriously. We are aware that we must work hard to maintain this edge every single day. Our burning drive to develop pioneering technologies and continue to play a leading role in shaping the future of road technologies is also reflected in our trade fair presence in the field of road technologies with the product brands Wirtgen, Vögele and Hamm.

Focus on mineral technologies

We have systematically enhanced our trade fair presentation in the field of mineral technologies. The exhibition area reserved for Kleemann is much larger than at the last bauma, demonstrating our aim to advance in the mobile crushing and screening business. Benninghoven's debut with seven exhibits and a 50 m-high mixing plant clearly indicates our intention to elevate this latest addition to our family to a top position right from the outset. The strong presence of Kleemann, the impressive introduction of Benninghoven and the competence and diversity of Wirtgen in surface mining applications send a clear message for the mineral technologies business sector: We are advancing purposefully in this field, our sights set on sustainable growth.

The power of innovation

Our innovative strength was demonstrated by 30 world firsts. With a total of 93 machines on display, our seamless range was clearly in evidence. Meanwhile, hundreds of individual advancements are a detailed testament to our practical focus. Our know-how and experience in practical applications were presented in an understandable form in the product brands' Technology Centers. As a result, visitors were able to immerse themselves completely in the special features of each brand's technology and profit from the expertise of the Wirtgen Group. This open-

ness and transparency was not only well received by the international audience, but also led to numerous lively and useful expert exchanges.

Close to our customers to the power of 5

For a whole week, we were able to provide our customers with comprehensive advice, thrill them with Wirtgen Group solutions and show our appreciation. Experiencing these bonds of partnership and the confidence shown by our customers fills us with pride and strengthens our resolve always to focus on our mission of being "Close to our customers". Customer orientation is and will remain our top priority.

We want to share with you the positive mood that we experienced in Munich together with our visitors. FORUM 51 focuses entirely on our presence at bauma this year. May we express our thanks to all who visited us in Munich, for their interest and their bond with us. Our respect is also due to the many highly motivated men and women who worked so hard to ensure the success of our trade fair presence.

Our warmest wishes,



Jürgen Wirtgen



Stefan Wirtgen



Visitors from around the world were able to discover numerous new developments in the exhibition area of the Wirtgen Group at bauma.



The Wirtgen Group at bauma 2016.

FORUM 51 - this special issue focuses on the world's biggest trade fair. All the products and services presented by the Wirtgen Group at bauma 2016 are presented on the following pages.

TRADE FAIRS + EVENTS

- 46 Close to our customers!**
Munich was a trove of unique impressions for visitors from all parts of the world.
- 51 Preview**
Look ahead: The Wirtgen Group at international trade fairs.

PEOPLE + MEASURES

- 52 Think Big**
Wirtgen Group trainees drew the attention of young people to technical careers at bauma.
- 56 Toward a brighter future**
An aid project on the fringe of a red-light district in the Philippines highlighted opportunities for ending destitution and despair.



From Munich to the rest of the world: For the first time, the Wirtgen Group appeared with five product brands at bauma 2016 – once again confirming its status as innovation leader.

PUBLISHING DETAILS

FORUM The WIRTGEN GROUP magazine

Publisher WIRTGEN GROUP Holding GmbH, Reinhard-Wirtgen-Strasse 2, D-53578 Windhagen, Email: forum@wirtgen.de, www.wirtgen-group.com
Montabaur Local Court HRB 10492, VAT ID No.: DE 149 525 751

Managing Directors Jürgen Wirtgen, Stefan Wirtgen, Rainer Otto

Editor responsible for content Michaela Adams, Tel.: +49 2645-131 128, Fax: +49 2645-131 499, Email: forum@wirtgen.de

Editors Michaela Adams, Mario Linnemann, Michael Erner. All rights reserved. Reprints and duplication only with the written consent of the editors.

Production muehlhausmoers corporate communications gmbh, Cologne; project management: Joscha Duhme; editorial office: Joscha Duhme, Rebecca Lorenz; layout: Andreas Kellotat, Michael Konrad

Translation interteam Übersetzungsbüro, Munich

Printed by Gebr. Kopp GmbH & Co.KG, Cologne

FORUM DIGITAL

Download this issue of Forum as a pdf file with the QR-code or use it to send Forum 51 to a friend.

➤ www.wirtgen-group.com/forum-mobil



INNOVATIONS AT BAUMA

- 8 ☐ **More profile**
Wirtgen presents pioneering innovations for concrete paving.
- 12 ☐ **Complete**
The largest and most innovative portfolio in the industry includes the right cold milling machine for every job.
- 14 ☐ **A cut above**
Wirtgen presents no less than three new developments in its core competence of cutting technology.
- 16 ☒ **For more quality in road construction**
Vögele sets standards in asphalt paving.
- 22 ☒ **Easy Drive**
Hamm once again stood out as a trendsetter in compactor technology at bauma.
- 28 ☒ **Solutions made to measure**
Kleemann arrived in Munich with a whole series of innovations in processing technology.
- 34 ☒ **Recycling to the max**
The largest exhibit presented in the Wirtgen Group's exhibition area hit the mark with innovative technology that protects the environment: the asphalt mixing plant BA 4000 from Benninghoven.
- 38 ☒ **At home in the world**
Job sites can be handled flexibly and efficiently with the new MBA 2000 mobile asphalt mixing plant.
- 40 ☒ **Powerful mobility**
The mobile granulator MBRG 2000 breaks reclaimed asphalt up into its constituent parts without destroying the original grain structure.
- 42 ☒ **Reliable**
In a special exhibition, the Wirtgen Group customer service was presented in detail to bauma visitors.

THE WIRTGEN GROUP AT BAUMA 2016

Impressive

With five product brands on display for the very first time, 93 exhibits and 30 trade fair firsts, the Wirtgen Group's 11,712-m² exhibition area was larger than ever in order to present the Group's portfolio in full splendour.







WIRTGEN: SLIPFORM PAVERS

More profile

Wirtgen is presenting trendsetting innovations for concrete paving with its slipform pavers SP 64i and SP 94i, as well as the texture curing machine TCM 180i. Market-driven products – worldwide.



T

he SP 64i is the ideal machine," raves Isidro Cabezuelo Moreno, a big fan of the new slipform paver from Wirtgen.

As Site Manager for UTE Dragados-Pavasal, he has already seen the prototype in action, on a job in the port of Valencia. Weeks later, he is still ecstatic as he stands in front of the machine at its world première in the Wirtgen Group exhibition area at bauma.

SP 60: New generation excels

"With the SP 64i, we can pave a 5 m-wide and 32 cm-thick concrete pavement accurately and reliably," he says, referring to a project for enlarging the container terminal. "The daily performance of 1,500 m² is considerably higher than that of comparable machine models and **fuel consumption has simultaneously**

been reduced by roughly 30%. Most importantly, the quality of the concrete surfacing is absolutely perfect." Together with the models SP 61/SP 61i and SP 62/SP 62i, the SP 64/SP 64i makes up the new SP 60 series. With this series, Wirtgen has developed a new generation of slipform pavers which combines the diverse applications for the globally successful SP 500 with the state-of-the-art technologies of the next larger series of SP 90 models.

Strabag Site Manager Patrick Stryj spoke with Wirtgen experts to obtain detailed information on the new developments in the SP 60 series. "In my view, they are exactly right. It is very interesting to see how the machines have evolved. The product range has become appreciably larger in terms of the modular design," says Stryj, who is impressed by the machines' individual configurability. He also believes that the new mid-range concrete pavers yield considerable added value for his job sites: "We have three Wirtgen slipform pavers in use. The proportion of sludge varies when working with concrete of varying consistency and different mixes. Being able to meter and spread these sludges is an excellent innovation." The fact that the machines can be set up without difficulty on site is another major advantage in his opinion. This is due, among other things, to intelligent interfaces via which further options can be connected, in keeping with the plug & work principle. "Job sites in Germany are constantly becoming smaller and more confined. My mobility and speed increase considerably if I can coordinate the slipform pavers on site, for instance with the aid of crawler



"Pavement quality and quantity are excellent, with low fuel consumption. The SP 64i delivers top results."

Isidro Cabezuelo Moreno,
Site Manager
UTE Dragados
Pavasal

tracks capable of turning large radii. That makes us more flexible," says Stryj, impressed by the hydraulic rotational drives with steering angles of 120° to the left and 160° to the right.

SP 90: Award-winning quality

The slipform paver SP 94i was also premièred by Wirtgen in Germany. Wirtgen has launched two new mid-range inset pavers: its SP 90 series, comprising the SP 94/SP 94i with four steerable, swivelling crawler tracks, as well as the SP 92/SP 92i (two crawler tracks). These machines can pave concrete surfacing between 3.5 m and 9.5 m wide and up to 450 mm thick with great precision, making them ideal for the cost-efficient production of large concrete pavements, for instance on highly durable motorways and runways.

Various options, such as dowel bar inserters (DBI), tie bar and lateral tie bar inserters, also allow the SP 90 series to be individually configured for a very wide range of applications and markets. In addition, the SP 94/SP 94i and SP 92/SP 92i also stand out through their high paving accuracy. And that is what ultimately counts, says Adam Carroll, Head of Department at the Lehman Construction Company: "Premium quality is the top priority and the greater the evenness of our concrete pavements, the more satisfied our customers are. The evenness achieved when reconstructing the 1,800 m-long runway at Jefferson City Memorial Airport in Missouri was almost unreal." In fact, the results were so good that his company won the regional **"Excellence in Concrete Pavement Award"** conferred by the American Concrete Pavement Association (ACPA) for this project.

Slipform pavers from Wirtgen primarily owe their appeal to their great versatility, as well as their quality and cost-efficiency. In keeping with the modular principle, customers can choose between different slipform systems for both the SP 60 and the SP 90 series. Tailored to regional requirements for inset applications throughout the world, these systems are also fully inter-compatible. Various offset moulds and numerous typical offset options, such as trimmers and a variety of conveyors and augers, are available for paving concrete profiles, i.e. for the offset pavers in Wirtgen's product range. "In this way, contours can be produced cost-efficiently and in high quality, from roadway edgings through concrete safety barriers and water gulleys to tracks up to



1



2

The slipform paver SP 94i is in great demand among customers, and not only on job sites (1). The TCM 180i is the ideal texture curing machine for concrete pavements (2).

3.6 m wide," says Tim Nash, Director Slipform Pavers, Wirtgen America, summarizing the various options.

TCM 180i: Handy solution

The new TCM 180i presented by Wirtgen guarantees successful texture curing of concrete pavements between 4 m and 18 m wide. When paving concrete pavements, the texture curing machine follows directly behind the slipform paver in order to produce the desired surface texture. Finally, the spraying system applies a dispersion to the fresh concrete surfacing to prevent it drying out prematurely. Christoph Hofmeister of Max Bögl Stiftung & Co. KG and member of the Executive Board of the Quality Association for Concrete Pavements (Gütegemeinschaft Verkehrsflächen aus Beton e. V.) explains why texture curing is so important. "Concrete must be prevented from drying out as soon as it has been paved by the slipform paver, otherwise stresses will lead to the formation of cracks." As Senior Site Manager for Max Bogl, Hofmeister has acquired experience with the preceding model. "The TCM 1800 has been reliably producing specified concrete



"The SP 60 series is highly customer-centric. The product range has become appreciably larger in terms of the modular design."

Patrick Styj,
Strabag Site
Manager

surfaces for us for many years. And these surfaces can vary from one job site to the next," says the university-qualified engineer, addressing an important development aspect. In order to optimally respond to customers' wishes, Wirtgen has **enlarged the range of different surface textures** that can be set on the TCM 180i. In addition to the established functions of transverse brooming and spraying, longitudinal brooming and spraying – and even the application of a diagonal finish – will be possible in future. The machine can also be fitted with mounts for a burlap or synthetic turf. A film unwinder (known as a Polyroll) helps to protect the concrete quickly and effectively from the negative effects of sudden rain. Travelling in reverse gear directly behind the slipform paver, the machine spreads plastic sheeting to protect the concrete from rain. Hofmeister: "I have seen innovations in the TCM 180i that are of practical use and add genuine value. I like the new solution presented by Wirtgen." □

➤ www.wirtgen.de



WIRTGEN: COLD MILLING MACHINES

Complete

With the cold milling machine models W 150 CFi and W 120 Ri, the market leader Wirtgen is presenting two world firsts in this sector. The largest and most innovative portfolio in the industry includes the right machine for every job.

The new small and compact milling machines feature the latest Wirtgen control technology and a uniform operating concept. In the Compact Class, customers can choose from eight machines with standard milling widths from 1.0 m to 1.5 m and milling depths up to 330 mm. In these machines, Wirtgen has combined the advantages of small milling machines – namely their maneuverability, one-man operation and flexibility – with the front loader principle and productivity of large milling machines. Wirtgen's range of small milling machines comprises no fewer than 16 machines with milling widths between 350 mm and 1,300 mm. The cold milling machines built by Wirtgen caught the eye of every asphalt or concrete milling buff visiting the trade fair.

EiJohn Vastmans, Managing Director of Top-Off N.V., a Belgian provider of milling services, was one such person. He put his money where his mouth was at bauma and bought a W 150 CFi. The most powerful machine in the Compact Class, it fills the gap between daily milling outputs of 300 t and 700 t in Vastmans' machine fleet. "This milling machine is very efficient, particularly in urban areas. It is a powerful machine, but also extremely mobile and permits a very good view of the milled edge." The W 150 CFi particularly impressed him on a job in Lokeren/Belgium, where the compact milling machine speedily and reliably removed a 4 cm-thick surface course from an approach road leading to a junction. Even bends do not pose a problem, thanks to extremely large conveyor slewing angles of 60° to both the right and the left. Since the loading conveyor can be pivoted at two different speeds, the machine operator was able to load the reclaimed asphalt pavement onto the truck with great precision. Even fluctuating engine speeds do not affect the loading process, as a constant conveyor speed is assured by cutting-edge control technology. **The job was done in less than 4 hours,** with the result that the machine could be transferred to the next job site on the same day.

Speed is of the essence, not only during construction projects, but also between jobs. With an operating weight of 20.8 t, the W 150 CFi can be transported in Belgium without requiring a special permit. "Reason enough to make this compact milling machine ideal for our market," says Vastmans with a smile before getting straight to the point: "My phi-



"Wirtgen has always been one step ahead of the rest. That was true even 30 years ago."

**John Vastmans,
Managing Director
of Top-Off N.V.**

16

SMALL MILLING MACHINES

with milling widths from 350 mm to 1,300 mm are included in the Wirtgen product range. There are eight machines in the Compact Class.

losophy is clear. I speak with the machine operators before deciding whether or not to buy a machine. They work with the milling machine every single day and know its ins and outs better than anyone else. They need to feel safe and secure when working."

Precision meets cost-efficiency

Cold milling machines from Wirtgen offer all this and more. The Top-Off team has long appreciated such established features as the **patented VCS extraction system for dust-free operation,** the multiplex systems for optimum leveling on fine milling machines and other models, or the flexible use of different milling drums permitted by FCS. And naturally, there's the service, too, as Top-Off's Technical Manager Henri Wiertz explicitly emphasizes: "The excellent service is just one more reason why Wirtgen machines are so good to work with. The team of service technicians is on the spot immediately when needed." But Wiertz is particularly impressed by Wirtgen's innovative power, which he explains with the aid of the W 150 CFi. "The improved ergonomic design and high level of operating comfort are an absolute highlight for me. The control technology offers a wide range of possibilities. Getting initial instruction from the experts of Wirtgen Belgium is extremely worthwhile, for it ensures that all functions can be used profitably. That is when you realize that everything has been developed perfectly and is well conceived."

With the implementation of cutting-edge control technologies, Wirtgen has reached the next stage of evolution in cold milling machines. Be it the active floating position of the side plate, the automatic raising of the scraper or the automatic folding in of the rear right-hand support wheel without lowering the milling drum – Wirtgen is a pioneer in the market with its new small and compact milling machines. John Vastmans, who has seen many cold milling machines come and go over the decades, is not surprised: "Wirtgen has always been one step ahead of the rest. That was true even 30 years ago." □

A man wearing a dark blue and white cap with a logo, a grey and white sweater, and a lanyard with a badge is looking at a large display of Wirtgen cutting tools. The tools are arranged in rows, showing various designs with orange and black components. In the background, another person is partially visible, and a banner with the word "OPERATION" is partially visible.

WIRTGEN: CUTTING TECHNOLOGY

A cut above!

With their quick-change toolholder system HT 22, the GENERATION Z cutters and the new PCD cutters, WIRTGEN presented no less than three new developments in their core competence field of cutting technology.

A

long service life and high machine output depend above all on optimum interaction between milling drum, toolholder and cutting tool. The new GENERATION Z point-attack tools and the quick-change toolholder system HT22 are specially designed to meet the requirements of cold recycling and soil stabilization. Generation Z has been significantly revised to take account of current requirements in the mixing/cutting process. For one thing, the reshaped carbide tip is additionally reinforced and the quality of the carbide material precisely tailored to meet the requirements. The steel base, wear plate and clamping sleeve have also been optimized with regard to their wearing properties. All these measures serve to extend the tool life of the cutters and to prolong protection of the toolholder.

Tests demonstrate stability

The quick-change toolholder system HT22 has been available since the beginning of the year for the model series of Wirtgen cold recyclers, soil stabilizers and tractor-towed stabilizers. Here too, a **new geometrical design and steel quality** significantly increase the wear volume of such components as the base and the upper and lower parts of the toolholder. The longer tool life and longer maintenance intervals increase the machine availability. "The system as a whole has proved its value in exhaustive test runs and more than 15,000 hours on the job," explains Benjamin Grüber, Wirtgen Product Manager for Cutting Technology. After the first few days of use, Daniel Jüttner of Bostab Bodenstabilisierungs GmbH has also given a positive preliminary appraisal: "We have recently started testing the new Generation Z point-attack cutting tools and have already observed a lesser degree of wear on the tools. Even when we come up against rock, the cutters do an excellent job of withstanding the high stresses."

Diamond-tipped cutting tools

For the first time, Wirtgen also presented their new PCD cutters with a tip of synthetic diamond material (polycrystalline diamond or PCD for short), as well as their complete range of point-attack cutting tools as part of their special presentation on cutting technology. ☐



"There is a lesser degree of wear on GENERATION Z tools. Even when we come up against rock, the cutters withstand the high stresses."

Daniel Jüttner, Bostab Bodenstabilisierungs GmbH



INFORMATION

Longer service life for picks and toolholder system



Advantages:

- ☐ Fewer tool changes
- ☐ Shorter downtimes
- ☐ Longer maintenance intervals
- ☐ Higher machine availability
- ☐ High cost-efficiency

☐ www.wirtgen.de/en/wirtgen-cutting-technology

VÖGELE: LEADERS IN PAVING TECHNOLOGY

Quality in road construction

From compact mini-pavers through new developments in the Universal and Special Classes as well as special presentations devoted to WITOS Paving and the RoadScan system, Vögele sets standards in asphalt paving.





Roland Schug, Head of Marketing at Joseph Vögele AG, was pleased that the trade fair proved so successful. "With 18 exhibits, we were once again able to demonstrate what it means to lead the world's paver market. Vögele has set new standards in many areas and presented pioneering innovations."

The company presented the SUPER 800-3i – a giant in the Mini Class – and showed that even small pavers can play in the big leagues. The SUPER 800-3i is an extremely compact mini-paver that can tackle a wide variety of applications. It can pave widths ranging from 0.50 m to 3.50 m. When paving narrow farm tracks or minor roads, along walls and edges, between tram lines or inside buildings: the Mini Class paver from Vögele unfolds its full strengths in confined spaces. This makes the SUPER 800-3i the ideal choice for urban development, landscaping and horticulture projects. As such, it is a particularly interesting option for local authority contractors.

Bernhard Erdtmann has been working in engineering design at Vögele for 10 years; he described the challenges presented by the project "SUPER 800-3i" as follows: "Improving on an immensely successful predecessor in such a small installed space was a challenging task. All the main modules, such as the travel drive system, operating system, engine and generator were completely revised."

Precisely these aspects were also of great importance to the customer Mathias Waggshauser: "As our company's Technical Director, I immediately noticed that this small paver has the same modern features as the large models. For example, I particularly like the electronically controlled travel drive system which ensures constant tracking. Moreover, with **25% more power**, the motorization is now optimally tuned to current paving conditions."

New developments in the Special Class

Two new developments were premiered in the Special Class: the SUPER 1800-3i with SprayJet module for paving thin layers with the new ErgoPlus operating concept, and, for compact asphalt pavements, Vögele presented its InLine Pave train with innovative features of the "Dash 3" generation.

The SUPER 1800-3i with SprayJet module includes a large array of impressive innovations. One



(1) In dialog: Christian Goralczyk, Wirtgen Augsburg, Mathias Waggshauser, Technical Director, A. Waggshauser GmbH & Co., Bernhard Erdtmann, Project Manager Development & Design, Vögele (from the left).

(2) The SUPER 1800-3i with SprayJet module – the only spray paver of its kind in the world.





"The SUPER 800-3i meets our needs perfectly. We have numerous inner-city sites with fairly confined conditions. Operation is every bit as intuitive as promised by Vögele."

Rainer Hartinger,
Operations Manager,
Passau Municipal
Building Authority



1



2

"A demonstration with the SUPER 1800-3i with SprayJet module won us over completely, leaving us with no option but to buy the machine!"

Thomas O.F. Morof,
Managing Director
of Otto Morof Tief-
und Straßenbau
GmbH



key feature is that operation of the spray module has been integrated into Vögele's ErgoPlus 3 operating concept. The new spray module features several innovations. The insulated emulsion tank, for instance, has a capacity of 2,100 l. **The capacity can even be increased to no less than 7,100 l by adding an optional extra emulsion tank.** And the integrated electric heating (2 x 7 kW) ensures that the emulsion is reliably maintained at the ideal temperature for spraying. What's more, a heated emulsion pump circulates the bituminous emulsion in the tank, thus ensuring that it is permanently homogenized. An additional filler port on the left-hand side of the "Dash 3" spray module makes for greater flexibility when refilling. Last but not least, all the main service points are readily accessible behind large service flaps, even with the spray module installed – much to the delight of every user.

Thomas O.F. Morof, Managing Director of Otto Morof Tief- und Straßenbau GmbH, decided there and then to buy a spray paver. A long-standing Vögele customer, he explained his reasons for choosing the SUPER 1800-3i with SprayJet module: "The rehabilitation of roads is becoming more and more important for us. We are frequently asked to undertake paving jobs in inner-city areas, often without a footpath. Application of the spray seal regularly caused problems here. Before long we were talking to our Wirtgen Group sales and service company. A demonstration with the SUPER 1800-3i with SprayJet module won us over completely, leaving us with no option but to buy the machine! Incidentally, it is also the first spray paver in the whole of Baden-Württemberg."

Untoppable flexibility!

The machines making up an InLine Pave train run directly one behind the other, in a single line. All machines are of extremely compact design. The InLine Pave train is made up of three machines and normally comprises an MT 3000-2i Offset feeder, a SUPER 2100-3i IP for the binder course and a SUPER 1800-3i for paving the surface course. Things are slightly different at the Rask company, which purchased a new Vögele spray paver for surface courses in order to maximize their flexibility and ensure that they are optimally equipped for their core business. The firm collaborated closely with the brand headquarters in Ludwigshafen, as various design modifications were required. In addition, the company bought both →

an AB 600 TP2 Plus High Compaction Screed (for InLine Pave use) and a standard AB 500 TV Extending Screed (for conventional jobs) for the binder course paver. As Ray Löffler, Managing Director of Wirtgen Zwickau, fittingly remarked: "The customer asked for an **all-singing, all dancing machine** and that is exactly what we delivered!

Quick reminder: With InLine Pave, the binder course and surface course are paved in a single pass, producing not only a perfect bond but also strong interlocking between layers. InLine Pave is based on the use of standard machines from series production which have undergone slight modification for "hot on hot" paving. For contractors, this means that they can also use every machine in an InLine Pave train for conventional projects, too. This increases utilization of the machine pool capacity and improves the investment's profitability. Precisely this argument was key for the Rask company, for which the production of thin wearing courses is a focal business field.

Go green

The new 10-foot pavers were presented to trade visitors for the first time at bauma in Munich. The tracked paver SUPER 2000-3i and the wheeled paver SUPER 2003-3i are two completely new machines designed to meet the needs of the North American and Australian markets. They are specially designed for highway construction and large-area industrial applications.

Both models, the SUPER 2000-3i and the SUPER 2003-3i, are equipped with the latest ErgoPlus 3 operating system from Vögele. And both machines can be combined with the VF 600, a screed with extending units at the front, as well as with the two screeds VR 600 and AB 600 with rearside extending units.

Kees van der Werff, Director of BA Blacktop, and Kim Percy, President & CEO of the company, were also impressed by the new SUPER pavers and the user-friendliness of the ErgoPlus operating system from Vögele. "Kees and I were both extremely impressed by the entire Wirtgen Group exhibition area. The area reserved for Vögele was very well designed and all machines were easily reached from all sides. It was interesting to see how the various European models compared to the machines we know from the Canadian market. We found the ErgoPlus 3 operating system particularly interesting. Vögele's efforts to make the operating system as simple as possible is a testament to the company's commitment to providing the operators with genuinely useful, easy-to-use tools."

The future of road construction

The Vögele Technology Center showcased the future of road construction and presented practice-gear solutions for better quality in road construction. Networked process optimization and documentation with WITOS Paving, state-of-the-art sensor



(1) Vögele easily met the requirements specified by Bernd Malcharek, Managing Director of Rask (left), seen here with Ray Löffler, Managing Director of Wirtgen Zwickau. (2) The special presentation on "Process and quality optimization" attracted numerous visitors to the Technology Center. (3) Vögele – a strong brand.

technology and solutions for working in 3D space as well as on the non-contacting RoadScan system for temperature measurement took center-stage.

WITOS Paving, a key topic for the future, attracted visitors like a magnet at bauma. The growing cost pressure and demands for higher paving quality and longer road lifetimes make it increasingly important to exploit hitherto unused potentials in the construction process. This is where WITOS Paving comes into play. The process optimization and documentation system developed by Vögele ensures that the main processes associated with asphalt paving **can be planned more effectively, and are more transparent, permitting a swifter response in the event of disruptions.**

Master mixers in the asphalt mixing plant, the transport companies' truck drivers and the paving team on site are all fully integrated into the construction process via WITOS Paving. WITOS Paving helps planning engineers and site managers by providing a comprehensive overview of the ongoing construction work, giving them decisive room for maneuver. For instance, by providing a means of controlling or managing deviations from planning in real time. On completion of the job sites, projects can additionally be analyzed and documented with WITOS Paving. Future contracts can then be optimized on the basis of the resultant findings. The overall cost-efficiency of road building projects is significantly improved at the same time.

When Stutz GmbH became aware of WITOS Paving, the company immediately recognized the potential inherent in this telematics system. The business relationship between Stutz and Vögele dates back some 20 years, during which the two companies have always remained in close contact. The decision makers quickly agreed to conduct joint field tests. Despite the paving team's initial scepticism, more and more were convinced after just a few days on the job:

"ThW basic idea underlying the system is great! Knowing the exact location of each truck as well as the tonnage being mixed and on its way to the paver is a real boon in practical operations. What's more, better coordination with the mixing facility saves money and improves the paving quality." As a result, WITOS Paving was requested by the site managers for the very next job. Needless to say, the Vögele development team was happy to take advantage of this positive response and arrange for further test runs. ■

> www.voegel.info



"All the most important process parameters are visualized for the site manager, the mixing facility, the master paver and on the paver itself. WITOS Paving ensures a transparent job site and supply chain for all parties in the process."

Björn Stutz, Technical Director of Stutz GmbH



RoadScan, the non-contacting temperature measuring system from Vögele, scans grid areas measuring 25 x 25 cm over a width of 10 m. Every square contains up to 16 individual measuring points.





HAMM: SMART COMPACTOR TECHNOLOGY

Easy drive

Modern compactor technology means controlling heavy machines intuitively, with modern drive systems and using online tools to network them with planners and the job site. Hamm once again stood out as a trendsetter at bauma.



fleet of 40 machines, a variety of equipment configurations that left nothing to be desired and smart products: the compactor manufacturer Hamm presented a shining array of innovations at bauma. The driving simulator with the new Easy Drive operating concept attracted trade visitors to the Technology Center like a magnet. As a result, the market leader once again proved to be a trendsetter in user friendliness. Ad Klompenmaker, who trains compactor operators in the Netherlands, praised the ease of operation: "Since the machines are becoming more complex all the time, it is essential to ensure that they are and remain easy to operate. Hamm, for instance, uses a display without complicated menu guidance to achieve this goal. What's more, the symbols used are clear and easy to understand."

Intuitive, ergonomic and award-winning

Thomas Bade, Managing Director of the Munich company IF Universal Design + Service GmbH, finds that: "Easy Drive is an outstanding example of interculturality. **Using colors to highlight the function groups allows anyone to operate a compactor, even if they are not familiar with a given language or typeface.**" Easy Drive received the coveted iF design award in 2015 for its excellent product design. This internationally renowned award takes account of many aspects, from a product's degree of innovation through the choice of material to functionality and ergonomic design. The operating concept was first implemented in the Series DV+ tandem rollers and is gradually also being introduced in the tandem rollers of Series HD+ and the Series H compactors.

Series DV+: New standards

DV+ tandem rollers set standards not just because of their intuitive operation. At bauma, Hamm presented all versions of the pivot-steered rollers with respective operating weights of 7 or 9 tons: with twofold vibration, with one vibratory and one oscillating roller drum and as a combination roller. All models have a fully glazed panoramic cabin with optimum visibility. Roberto Facchetti of Sole Immomec Spa in Montichiari, Italy, commented: "The window in the floor is a particularly ingenious feature since it gives a clear view of both drums." With their modern engines and highly efficient diesel particulate filters, the new machines comply with the stringent emission standards of the most restrictive European and North American markets. Large water and diesel tanks allow the machines to operate for long periods, thus ensuring high productivity. The tanks are very easy to refill, particularly in the case of the water tank which is refilled quickly and safely from the ground using pressure – and naturally as a standard feature. The machine technology ensures **top quality compaction** due, among other

things, to the fact that the pivot steering of the DV+, featuring large turning angles and an enormous track offset, can be controlled with great precision in four different steering modes. Constant distribution of the weight in combination with the automatic function for acceleration and deceleration ensures perfectly level asphalt surfaces, even in tight bends. As Tobias Tschada, Managing Director of Cellere AG from St. Gallen in Switzerland, put it: "The DV+90 is one of the best rollers ever built."

H CompactLine: Short but powerful!

For earthworks, Hamm showcased the super-compact vibratory compactors H 5i and H 7i from their H CompactLine in Munich. These specially designed compact machines meet high standards. Driven by a Kubota engine, the compactors have a rated engine output of 54.6 KW and comply with EU emissions standard Tier 4/Stage IIIB. The wheels are driven by wheel motors and a special drive system distributes the torque to the front or rear axle as required. This gives the compactors excellent climbing ability with a large ground clearance. Besides this, the machines are exceedingly short, especially the H 7i: With a length of roughly 4.4 m, it is shorter than any other compactor worldwide in this class. Compact design combined with 3-point swivel joint and a short wheel base ensures very good driving and handling properties. The compactors are consequently ideal for use on confined and steep job sites. ➔



AT A GLANCE

Easy Drive – the star of the show

An operating concept based on intuition and ergonomic design – for optimum compaction and swift initial training.

- Small number of cleverly arranged operating elements
- The machine is steered via the steering wheel. All the other essential operating elements are located on the joystick and in the multi-functional armrest.
- Easy, self-explanatory operation regardless of the language spoken.
- Color coding ensures clear allocation of all operating elements.
- Individually adjustable seat, armrest and steering column.

➤ www.hamm.eu



"The great thing is that, thanks to electrical rotation of the seat, you always face the direction of travel but there is no change in the way the controls are activated."

Karl Wurcz, Site Manager for Leyrer & Graf Baugesellschaft, Austria



"As an equipment leasing company, we exclusively need machines that are easy to understand and to operate. We only need to explain operation of the Hamm compactors to customers once, and everything is immediately clear."

Gabriel Colasanto, CEO of Colfer S.R.L., Argentina

The new DV+ impressed everyone right down the line: with its excellent compacting strength and easy machine handling (1) - and with its intuitive Easy Drive operating concept (2).

Ideal for leasing firms

As on all Hamm machines, every manual operation is evident from the arrangement of operating elements and from the layout of the operator's platform – making them ideal rental machines. In addition, operators can easily adjust the seat to their size and weight.

Gerhard Lang, Managing Director of Baumaschinen Lang e. K. in Kressberg, confirms that: "Most of our machines are sent to the customer without initial training, simply on account of the distances involved. That is no problem at all with Hamm compactors." He appreciates product features that make the work more efficient, such as Hammtronic. **"The machine management system**

saves fuel and reduces wear and tear when operating the compactors – a key aspect for leasing firms." Hamm supplies such optional features as the automatic engine-off function, a telematics interface, an electronic battery isolating switch, padfoot segments, special combination scrapers and models with a VIO drum.

Compaction data delivered in real time

Not everything that Hamm presented at bauma was a heavy-weight. WITOS HCQ is a software program that not only links planners with the job site, but also delivers compaction data more quickly, more safely and to all locations. It consequently supplements the HCQ (Hamm Compaction Quality) Navigator, the versatile measurement and documentation system for compaction. The basic version of this satellite-based system captures all the important compaction parameters and the progress made by one or more compactors during the work process. To this end, the HCQ Navigator produces a real-time compaction map showing which areas have already been sufficiently compacted and which have not. Instead of using a USB flash drive to send process data to an office computer at the end of the day or of a project section, as in the past, data are now sent by WITOS HCQ via an online tool. As a result, the data is theoretically available at any location worldwide, even during the compaction process. One feature of particular interest for US projects is that, with WITOS HCQ, Hamm has made it possible to export data in real time for analysis by the VETA software. Data can also be transferred in the opposite direction: planners can prepare data for a job site offline and then make them available via WITOS HCQ. WITOS HCQ uses cutting-edge mobile radio technology for its data communication; the data are transferred via the Wirtgen Group's WITOS portal. The server used for communication is located in Germany, where the data are also professionally secured.

Market-driven technologies – Worldwide

Such intelligent solutions reinforce Hamm reputation. "I do not have a Hamm compactor as yet, but I know that Hamm is a lead-



"The DV+90i is one of the best rollers ever built. This is partly due to the Easy Drive operating concept – I think it's really cool!"

Tobias Tschada, Managing Director of Cellere AG from St. Gallen, Switzerland

ing manufacturer whose range always includes new and above all innovative technologies," says Mustafa Machkour, Managing Director of Macotran S.A.R.L. in Morocco. "That is why I am now considering buying Hamm compactors." Achour Hammouche, Purchasing Manager for Cosider of Algeria, is impressed by the adaptability of the Hamm products. "For me, the brand name Hamm stands for quality and innovation. This is where I can find exactly the machines we need. By which I mean not only engine technology for North Africa, but also the operating weights and options of relevance for us."

For Ajendra Agarwal, Purchasing Manager for GR Infraprojects Ltd. in New Delhi, the fact that suitable compactors are locally built in Pune for the Indian market is key. In his view, after-sales support is another essential criterion. "It is by far the best throughout the industry. And because the Wirtgen Group service technicians are so good, we let them carry out all the maintenance work." Showing forethought for international customers is an integral part of Hamm development strategy. Established construction methods, different material situations and different national rules and regulations on site have created considerable demand for a large variety of equipment versions on the various continents. "This diversity is a real challenge for our development engineers," says Hamm's CEO Dr. Stefan Klumpp. "It is also an expression of our closeness to the customer: we build the machines that our customers need for projects in their respective countries – it's as simple as that." ■



The DV+ 70i comes in three versions: the pivot-steered tandem roller is available with two vibrating roller drums, with one vibrating and one oscillating roller drum or with vibrating roller drum and a wheel set.

KLEEMANN: A WHOLE SERIES OF INNOVATIONS

Solutions made to measure

You can't hold back evolution – and Kleemann is at the forefront. That was the motto of this specialist for mobile processing technology at bauma.





An exhibition area of more than 2,300 m³ and nine exhibits, including two world firsts: anyone viewing the Kleemann plants presented in the Wirtgen Group exhibition area will have confirmed their prior impression of the innovation leader. In addition to five plants from the EVO series and two screens, Kleemann also unveiled their mobile cone crusher MOBICONE MCO 11 PRO and the MOBICAT MC 125 RR, a special version of the mobile jaw crusher. Both plants are designed to create genuine added value for their users.

Closeness to the customer was evident everywhere. "For Kleemann, being 'Close to our customers' is not an empty promise," says a thrilled Ryan Domres, Managing Director of Resource Recycling of Arizona LLC. "It's true!" More than 40 members of the Kleemann staff were on hand to talk with customers during the trade fair. They answered the questions raised by interested visitors, compared notes with customers and passed on their know-how in intensive discussions with visitors.

Special plant: MOBICAT MC 125 RR

Kleemann sets high standards for the competition, not only in terms of know-how and user convenience, but also with their numerous optional extras. For special applications, the **crushing plants can be upgraded** at any time to meet customers' individual wishes. The latest shining example is the mobile jaw crusher MOBICAT MC 125 RR, where RR stands for wobbler feeder (from the German term "Rollenrost"). The plant was developed by Kleemann in close cooperation with the natural stone processing firm SMBP. Competent members of staff and made-to-measure solutions paved the way for this trust-based collaboration. "I contacted Kleemann three-and-a-half years ago, as I'm already very happy with the MC 160 PRR," explains Christian Laye, Director General of SMBP. "At the time, I was expecting to secure the contract for a major project and urgently needed suitable equipment for the job." And because precision and boundless dedication are top priorities for the client, SMBP will be relying on the MOBICAT MC 125 RR when it starts mining limestone in summer 2016.

In tune with the times: MOBICONE MCO 11 PRO

Crowds thronged the Kleemann exhibits every day of the trade fair. After all, the company was unveiling not only the MOBICAT MC 125 RR but also the new cone crusher MOBICONE MCO 11 PRO to the world for the first time ever. This first member of the new PRO series will henceforth supplement the processing specialist's product portfolio. The MCO 11 PRO features an **extremely robust design and is destined for intensive, long-term use** in tough quarrying operations. As Christian Knoblich, Development Project Manager for the MOBICONE MCO 11 PRO at

Kleemann explains: "From the very beginning, our development efforts focused not only on a robust design, but also on high performance and simple control". For this reason, all plant components and functions can be controlled via the touch-sensitive panel. "All plant functions are clearly visualized on the 12-inch monitor. In this way, the user is intuitively guided through the menu." Status displays and fault locations are also clearly presented on the monitor.

A further advantage is that maintenance is now even simpler than on the preceding models. "All the main machine components of the MOBICONE MCO 11 PRO are easily accessed either from the ground or from working platforms," says Knoblich. Crushing tools can be changed without sealing compound.

The complete EVO series: Ready, steady, go!

Due to the larger exhibition area, the complete EVO series also took center-stage in Munich. Specially developed to meet the requirements of crushing contractors, this series is characterized by its compact size. From mobile impact crushers through jaw crushers to cone crushers, all plants in the series can be **transported without difficulty**. "Changeover times have been reduced since the hopper walls and side discharge conveyors are rapidly moved into position for operation with hydraulic assistance," raves Jose Juan Murmann; his company Consorcio Remix, S.A. owns four Kleemann plants. The optimized flow of material is nothing new to Kleemann. Even today, the Continuous Feed System controls the supply of material to the crusher in accordance with its filling level. If the crusher is overfilled, the material feed is restricted by the system. When crusher utilization is low, the feed speeds up again without delay. "However, that does not mean that consumption also increases whenever the feed speeds up, explains Thomas Mössner, Head of Mobile Plant Technology at Kleemann. "The diesel direct drive unit makes these machines exceedingly economical. For a throughput of 10-15 t/h, our MR 130 EVO uses only 8 gallons of diesel as opposed to 10-11 gallons for comparable plants built by other vendors", says Kevin Hokanson of AW Oaks & Son. The crusher is driven directly and hence with low loss via a fluid coupling. A built-in generator produces electric power for the chutes, screens and conveyors. This reduces fuel consumption, particularly in relation to all-hydraulic drive units, and is more eco-compatible.

At bauma, Kleemann products had a clear edge, not only in terms of flexibility, customer satisfaction and environmental compatibility. The plants also set standards in productivity. "Thanks to the uniform drive system, our crushers can easily be interlinked with one another," reports Joachim Köhler, Head of Process Engineering. "This means that productivity can be boosted even further with the right combination of plants." ■

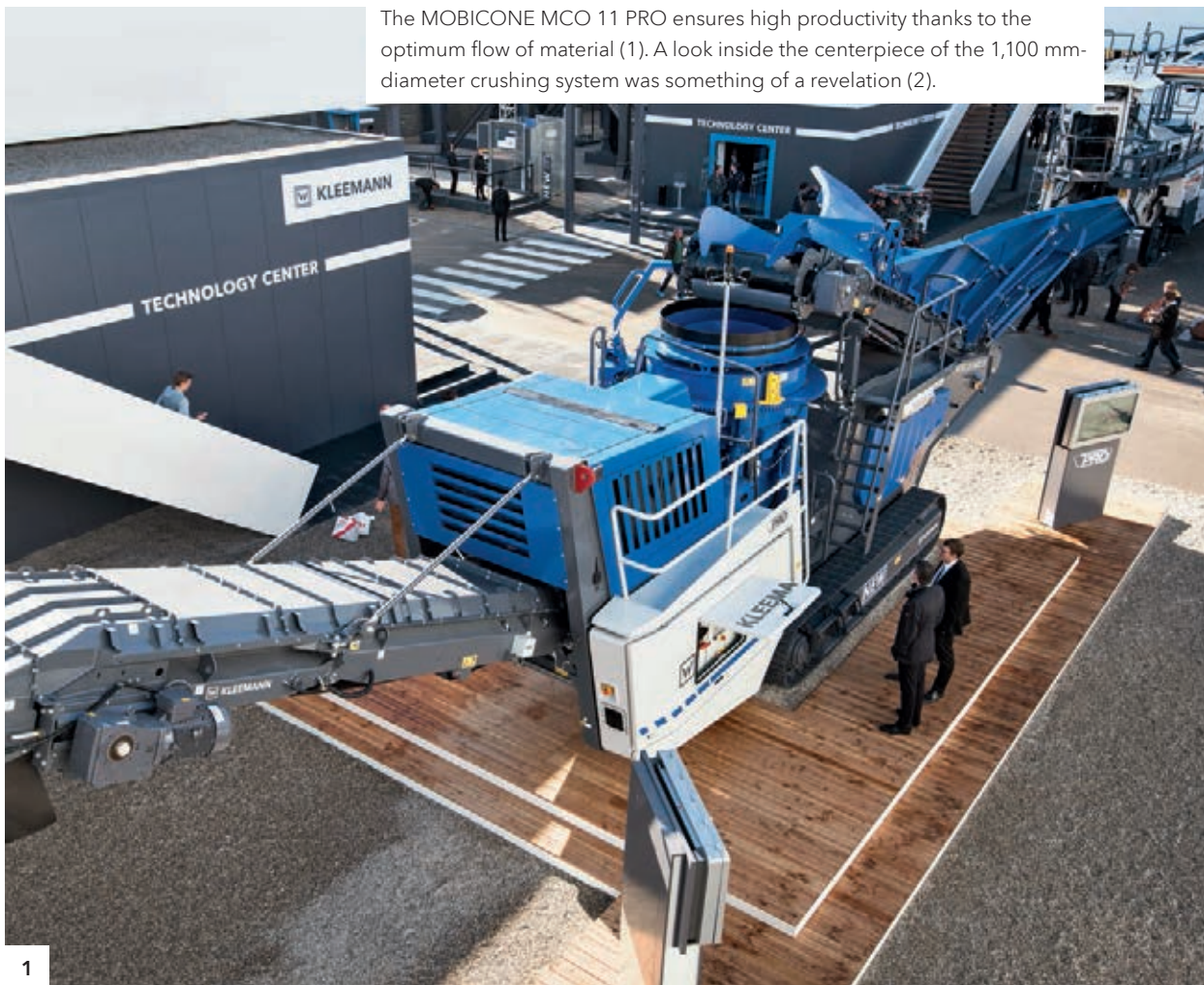
470

TONS per hour are processed by the mobile cone crusher MOBICONE MCO 11 PRO.

48

TONS weighs the MCO 11 PRO. It is immediately ready for use, since it can be transported without removing parts of the machine.

The MOBICONE MCO 11 PRO ensures high productivity thanks to the optimum flow of material (1). A look inside the centerpiece of the 1,100 mm-diameter crushing system was something of a revelation (2).



1



"Crushing plants from Kleemann are very easy to operate and to service. Our MR 130 EVO has now been operating for 8,000 hours without incidents."

José Juan Murmann, Consorcio Remix, S.A.



2



"I received a demonstration model of a MOBIREX MR 130 EVO and never sent it back."

Kevin Hokanson,
AW Oaks & Son



"Integrity within the Wirtgen Group is immense, regardless of whether you run a large corporation or a small firm."

Ryan Domres
and **Tom Domres,**
Resource Recycling
of Arizona / Domres
Grading





1 The MOBICAT jaw crusher

The rugged jaw crushers MOBICAT MC 100 R EVO and MC 110 R/Z EVO are used both for mining natural stone and for recycling. The "R" version features a vibrating feeder with integrated slotted grate, while the "Z" version has an independent grizzly. Blockages in the crushing jaw are prevented by the elevated crusher jaw. The size of the crushing gap is conveniently determined via a touch-sensitive panel and set hydraulically.

2 The MOBICONE cone crusher

The cone crushers MOBICONE MCO 9 EVO and MCO 9 S EVO are primarily used in secondary or tertiary crushing stages. The "S" version includes an optional screening unit. The EVO plants are designed to ensure easy access to all machine components and to make maintenance work easier.

3 The MOBIREX impact crusher

The MOBIREX impact crushers MR 110 Z EVO2 and MR 130 Z EVO2 are equipped with double-deck pre-screens. As the material flow through the plant becomes wider, the throughput is comparable with that of large impact crushers. These plants feature the award-winning Lock & Turn system for safe servicing. The crusher can only be accessed via a multi-stage safety system and the rotor can be conveniently locked in any position to change the rotor ledges.

BENNINGHOVEN: STATIONARY ASPHALT MIXING PLANT BA 4000

Recycling to the max

Asphalt mixing plants from Benninghoven deliver immense mixing outputs, outstanding quality and recycling at top level. The concept of heating the material to be recycled indirectly and in a counterflow is an excellent solution for the future.





It is quite beyond doubt. Of all the exhibits presented by the Wirtgen Group at bauma, the stationary asphalt mixing plant BA 4000 from Benninghoven certainly stole the limelight. Towering 50 m above the exhibition area, its effect was magnetic, even for visitors from other sectors. Users and executives, as well as entire families, queued to take the lift up to the top of this giant. No matter how different their interests may have been, once they reached the top all visitors agreed: The BA is impressive, not just because of the stunning view, but above all due to its outstanding technology.

The erection of the plant that would tower over the bauma grounds started back in November – with some special assistance. “Our customer decided to buy the plant in September 2015 and contributed the foundations,” says Hans-Joachim Schriek, Sales Engineer for Wirtgen Augsburg. The company Max Bögl was not only a satisfied Benninghoven customer, but also a strong partner. The construction company supplied prefabricated concrete elements for the foundations which can subsequently be reused at the plant’s future location in Sengenthal, Bavaria.

Outstanding quality and flexibility

With production outputs ranging from 240 t/h to 400 t/h, the type BA stationary plants – Benninghoven’s flagship – require stable foundations. When planning and setting up stationary plants, expandable modules are tailored to customers’ individual specifications. “Together with Max Bögl, we found that the plant which we were already intending to showcase at bauma reflects the company’s requirements in all but a few minor details,” reports Schriek. Only a few months were consequently needed to conclude the planning and the advisory phase and seal the deal. If required, Benninghoven advisers are happy to allow considerably more time for intensive exchanges and individual adjustments. “Our relationship was already based on a great deal of mutual trust, for this is our third asphalt mixing plant from Benninghoven,” explains Johann Bögl, shareholder in the Max Bögl group of companies. “With its **outstanding characteristics in terms of quality, flexibility and environmental protection**, the BA is exactly what we need for asphalt production. It leaves nothing to be desired.”



“The BA is exactly what we need for asphalt production. It leaves nothing to be desired.”

Johann Bögl,
shareholder in the
Max Bögl group of
companies

400

tons per hour can be produced by Benninghoven’s largest stationary asphalt mixing plant. The BA 4000 showcased at bauma has a mixing capacity of 320 t per hour.



1



2

Visitors flocked to see the stationary asphalt mixing plant (1) and the MBA 2000 (2). The parallel drum in the innovative counterflow system with hot gas generator (3) not only helps to protect the environment, but also considerably reduces the plant's total energy requirement. At the same time, the recycling material is heated to the temperature of 160°C required for processing.



Max Bögl uses a combination of two recycling feed systems in a single plant. Known as multi-variable feeding, it permits maximum feed rates in the cold recycling process. It prevents steam hammers during expansion of the water vapor, is easily retrofitted into existing plants of all makes, and permits production of hydraulically bound base course material as well as cold asphalt. Material is gently fed into the mixer in a cycled operation.

In the mixer, the plant's centerpiece, the mineral material is intensively mixed with binder and filler to produce a homogeneous mass. **Each mixing cycle, including filling and emptying, lasts 45 seconds.** "To withstand the high stresses in terms of wear, weight and the transmission of forces, the mixer is constructed entirely from top quality materials - the objective being to ensure optimum protection against wear and tear," says Dr. Roland Tücks, Head of Development and Engineering Design at Benninghoven.

Hot gas generator for optimum recycling

The feed rate of up to 90 + x% recycling material is a special attribute of the plant. "The asphalt industry is constantly looking for new ways to optimize the processes. One key approach is to increase the proportion of reclaimed asphalt in all formulations," reveals Frank Wagner, Head of Research and Development at Benninghoven. This has been made possible by a new process which was developed as an alternative to ordinary parallel recycling drum systems. Instead - and this is new - the recycling material is indirectly heated in a counterflow. "In other words, the material flows through the drum towards the heat source. In this way, we achieve higher material temperatures and reduce the temperature of the exhaust gas," explains Schriek. The discharge temperature of 160°C is equal to the processing temperature, with an exhaust gas temperature of 100°C.

Overheating the material is no longer necessary. Energy requirements are greatly reduced - thanks to the hot gas generator. "Direct firing would burn the recycling material so that it can no longer be used," says Schriek. The burner delivers the thermal energy needed to dry and heat the material. It is directed into the hot gas generator, where the flame mixes with circulating air in a further counterflow. Emission levels are below the range specified by standards. "With this innovative technology, Benninghoven already complies with future standards," says Wagner. ■



BENNINGHOVEN: ASPHALT MIXING PLANT MBA 2000

At home in the world

Job sites can now be handled flexibly and efficiently, thanks to the intelligent concept underlying the new mobile asphalt mixing plant MBA 2000.

Although a few meters shorter and not quite as massive, it is nevertheless impressive: The mobile asphalt mixing plant MBA 2000 from Benninghoven is the "little sister" of the stationary asphalt mixing plant BA 4000. And thanks to the intelligent new concept, the plant can be set up and taken down again in no time at all. "Mobile plants are quickly available at changing project sites, making them ideal for use on job sites with limited time frames," explains Torsten Heusinger, Project Manager at Benninghoven. "It takes two 60-t cranes no more than three days to set up all parts of the plant." Wiring and piping are already installed at the factory to simplify the on-site handling.

Whether on gravel, loam or sand – the mobile asphalt mixing plant is simply installed on mobile steel foundations. A compacted gravel surface is all that is needed. The mixing plant can be set up close to the construction site to ensure a consistently high asphalt quality. Mixers from 1.25 to 3 t are used for the available capacities with plant productions between 100 t/h and 240 t/h. This unprecedented flexibility means that homogeneous asphalt can easily be produced either in large quantities or in small batches of up to 500 kg – an immense advantage over other plants.

Customers also profit from the economic benefits of the mobile asphalt mixing plant MBA 2000: "Since the wiring is pre-installed, the customer can commission the plant independently using its own operating personnel." The plant is not only operated independently, **it also can be relocated without requiring additional personnel.** Thanks to the sophisticated design concept, the plant is ready to resume production within a very short

space of time. "In this way, the customer saves money as well as time," says Rainer Böllinger from the Marketing department at Benninghoven.

Low logistics costs are another advantage of the mobile plant. "Standard trucks are all that the customer needs for installation and transport of the MBA 2000," says Böllinger emphatically and lists the mobile components: "Dual-line air braking system, parking brake, central pivot complete with height-adjustable supports and a complete lighting system – the mixing plant is truly at home the road!" Designed for durability, the wear plates are also modified to withstand the hard rock and thermal loads. Being road-approved, the plant can be transported by road anywhere in the world.

5-fold screening complies with several standards

The latest plant generation also includes five-fold screening as a standard feature so that the mobile asphalt mixing plant can not only be transported by road worldwide, but also complies with a variety of standards and formulation requirements. The centerpiece of every plant – the mixer – blends the material with binder and filler to form a homogeneous mix. A dryer drum is mandatory to remove moisture from the basic material from the outset. "Each drum is subjected to a 100% final inspection at Benninghoven," says Project Manager Torsten Heusinger. "To ensure that our customers can also obtain a perfect result, we build the dryer drums in different lengths, diameters or with different internal fittings to cater to different site factors."

And if more is needed, the MBA 2000 can be upgraded by adding various components. The burner, for instance, can be operated with different fuels. **To achieve this, the fuel for the combination burners can be changed at the push of a button,** guaranteeing independent and flexible operation. At the same time, this has the advantage of eliminating downtimes due to lack of raw material or supply disruptions. Various additives can be added to the mix to optimize the properties of the asphalt. In this context, Benninghoven supplies a simple or two-fold feed system and feeding in containerized form with integrated crane way and housing. Last but not least, even the paintwork on the plant can be individually adapted to the customer's wishes. ■

At a glance

A BAUMA HIGHLIGHT: THE MBA 2000

The mobile asphalt mixing plant MBA 2000 stands out not only on account of its plant production of up to 240 t/h.


- Available at short notice, due to the sophisticated logistics system and short time needed for setting up and taking down the plant.
- Straightforward installation on mobile steel foundations. An even, compacted gravel surface is sufficient for the complete setup area.
- The sophisticated concept and pre-wired units allow customers to resume operation swiftly and independently after moving to a new construction site.
- The plant can be enlarged as required.



BENNINGHOVEN: GRANULATOR MBRG 2000

Powerful mobility

The mobile granulator MBRG 2000 breaks reclaimed asphalt up into its constituent parts without destroying the original grain structure. Combined with an asphalt mixing plant, it enables new traffic arteries to be constructed using over 90% "used road material".

 BENNINGHOVEN

In Munich, the mobile granulator MBRG 2000 was quite literally overshadowed by the towering BA 4000. But in a figurative sense, no one could have claimed that this was the case. The plant not only caught the eye of visitors queuing for the lift to take them up the BA. Interested trade visitors and enthusiastic users were constantly crowding around the plant. One of these was Bernd Erler, Managing Director of ES Bautransport. Erler is something of an addict when it comes to the MBRG 2000. "This is our eighth machine," he admitted shortly after signing the purchase contract at bauma.

The company assists its customers by crushing reclaimed asphalt on site and has been using granulators from Benninghoven for the past seven years. "We went into it as a niche business at first, amid increasing demands from customers for high-grade equipment to process their reclaimed asphalt and boost the proportion of recycling material to be added in asphalt mixing plants," says Erler. He reports that the plant is ideal for this purpose, as the processed material is of such high quality that up to 90% can be added as recycling material. According to him, after receiving samples of crushed material from the company, even skeptical master mixers in asphalt mixing plants began refusing to accept any other technologies and even recommended the MBRG to competitors.

Significantly reduced fines

The Benninghoven granulator gently breaks reclaimed asphalt up into its constituent parts without destroying the original grain structure. Another significant advantage of this technology is that it produces considerably less dust and fines – a decisive boon which largely precludes the risk of clogging in transport channels and the parallel drum. Major reductions in the efficiency of the parallel drum or a complete failure due to fines are prevented in this way. "Since it specializes in crushing asphalt, the granulator is effectively unrivalled in the market. In our opinion, the product discharged from the machine is simply unbeatable," adds Silvio Blum, Granulator Coordinator at ES Bautransport.

Benninghoven uses a total of three crushing stages to achieve such results. In a purely one-man operation, the granulator is fed with reclaimed asphalt by a wheeled loader. In the first crushing stage, the asphalt slabs are broken up by tampers and then pushed downwards onto the milling shaft. During the upward movement, the tampers prevent bridges forming in the hopper. The milling shaft with wear protection and special-purpose cutters ensure an output of 0-70 mm in the second crushing stage. Before the crushed material proceeds to the screen, a magnetic separator removes entrained ferrous particles from the MBRG 2000. After separation into fractions by the

screen, the oversize grain is sent to crushing stage 3, the secondary granulator. The material which is output by this stage can be varied in line with the screen loading. It is returned to the screen via the oversize grain recirculation system.

But the outstanding end-product is not the only convincing aspect. Efficiency is maximized by low wear costs, low operating costs and low follow-up costs. "The entire machine is simply well designed and also offers superb operation and control," adds Blum.

In fact, an integrated self-regulating control system even permits temporary independent plant operation. Maximum throughput is guaranteed by the infinitely variable, self-adjusting material feed system. Radio remote control can also be installed if desired. Little wonder that Erler is such an addict: "Although some of our customers still prefer older technology, we firmly believe that this granulator represents the future." ■



FACTS AND FIGURES

Granulator MBRG 2000



Screening	double-deck screen
Maximum capacity:	200 t/h
Dimensions (L x W x H)	18,000 x 2,980 x 4,000 mm
Weight	54,500 kg
Power unit	283 kW
Average drive power	125 kW
Feed hopper width	4,350 mm
Feed hopper depth	1,450 mm
Loading height	3,600 mm
Capacity	6 m ³
Max. slab width	1,800 mm

➤ www.benninghoven.com

The image shows a large exhibition stand for the Wirtgen Group, located on the third floor of a building. The stand is tall and features a large map of Europe on the ceiling. The stand itself is black with white text and logos. It includes a section titled '3 CUSTOMER SUPPORT' and another titled 'WIRTGEN GROUP CUSTOMER SUPPORT'. There are also images of Wirtgen Group products, including a large image of a man and a smaller image of a machine. The stand is illuminated by spotlights.

CUSTOMER SUPPORT

Reliable!

Customer support is a top priority in the Wirtgen Group. So little wonder that the special exhibition on this subject was located at a lofty height on the third floor of the main building. Quite literally, right at the top.





That is also my view of customer support by the Wirtgen Group. They really do help. I can think of a few medical practices that would do well to follow their example. People you can contact directly, a competent, fast and friendly service – simply perfect,” says Andreas Adam of Thiendorfer Fräsdienst, summarizing the service provided by the Wirtgen Group branch in Zwickau. “Needless to say, we’re overjoyed to hear such praise. For us, however, a professional service goes without saying – be it on the job site, in the workshop or in spare parts supply. We take our job seriously and do our utmost to make the best of it every single day,” explains Uwe Walter, Managing Director of the Wirtgen Group sales and service company Wirtgen Zwickau. How that works and just what the Wirtgen Group means by “service you can rely on” were two of the questions fielded by experts at the presentation on customer support.

Solutions developed in partnership

“For us, our customer is also our partner. If they have a serious problem in the execution of a construction project, we do our best to find a solution,” explains Uli Städele, Head of Service at Wirtgen Augsburg. “This is when personnel management becomes hectic: The technician nearest to the job site concerned is immediately dispatched to the site and all other jobs are reorganized. If need be, we also locate the nearest replacement machine – provided that it is not actually being used – and it is then transported to the site. Sometimes we also organize competent machine operators, for instance if a member of the job-site team needs to take sick leave. If necessary, our technicians



“I rely on customer support provided by the Wirtgen Group. They give speedy assistance whenever help is required.”

Resu Ottiger, Leuenberger Dienstleistungen, operator of a cold milling machine

will even take on the job themselves – everything’s possible. Only one thing takes priority: We have to keep things going on the job site,” says Städele.

“Reinhard Wirtgen himself provided road construction services, which is why we in the Wirtgen Group understand our business – something that is highly appreciated by our customers,” adds his colleague Walter.

Success through know-how

But expertise does not grow on trees within the Wirtgen Group either. It is cultivated in targeted regular training courses. “In one recent training course, we introduced our young technicians to old machines dating back to times before the invention of modern diagnostic software. Such training is essential, for our machines have one disadvantage: they last too long and remain in service for decades in some markets,” explains Lothar Krummshaid, Head of Training at Wirtgen, with a twinkle in his eye.

In the Wirtgen Group, training naturally embraces the customers as well as our own employees. The CTTs, the Group’s training centers, offer year-round training courses for operators and workshop personnel, including special courses devoted to such subjects as electrics, hydraulics and hosing.

“We have registered to take part in the next training course for machine operators. The training is great and really in-depth. My machine operators love these courses. Well trained operators not only produce better results, but also keep their machines in tip-top condition. For me, that pays off and it’s great fun, too. And you can really learn a lot,” says Ian Smith from the USA. ■

i SIMPLE DIAGNOSIS

WIDIAG

WIDIAG is the service diagnostic system developed by the Wirtgen Group. For service technicians around the globe, the system represents the interface between man and machine and simplifies the fault diagnosis process enormously. For the customer, the more efficient troubleshooting minimizes downtimes. The service technician connects his laptop to the machine. All measured machine values are visualized by WIDIAG on the program’s user interface. WIDIAG can also download the machine’s internal fault memory. The system interface is installed as a standard feature in all machines.



The presentation clearly showed just what the Wirtgen Group means by "service you can rely on". Here too, the spirit of partnership in relations with customers was evident everywhere.



BAUMA - IMPRESSIONS

Close to our Customers

Likeable, comprehensive and represented for the first time with five product brands: this is how the Wirtgen Group came across at bauma 2016. Visitors from around the globe delved into the latest developments in road and mineral technologies and returned from Munich with a trove of unique impressions.



"Here, we can feast our eyes on the best products, technologies and components."

Ahmed Al-Musbahi,
Director, Al-Musbah
Trading Group,
Saudi Arabia



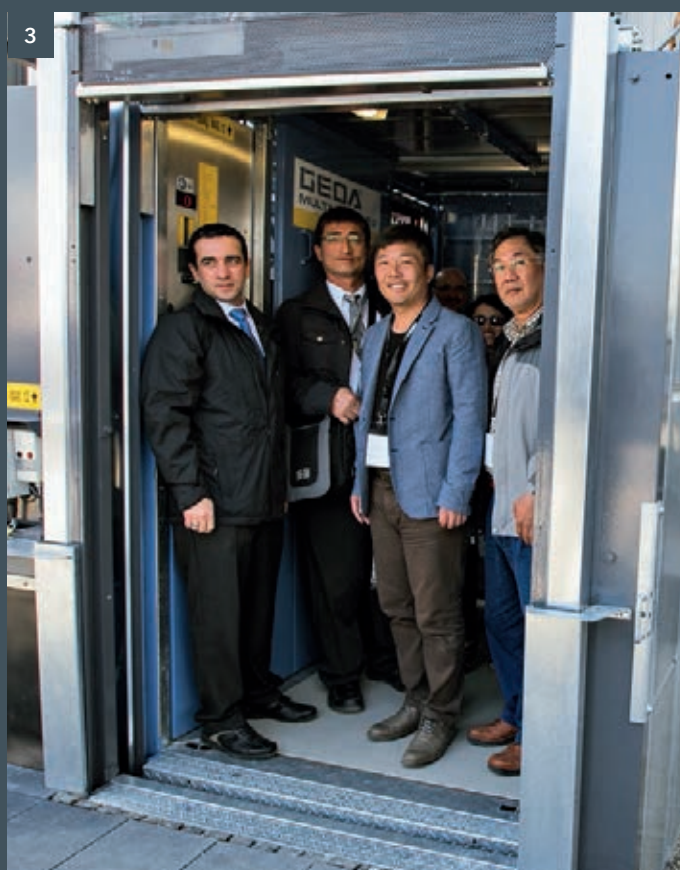
The Benninghoven tower was not the only popular observation platform: the Skywalk also commanded an excellent view (1). Exuberance when the number of participants for tours of the exhibition area topped 1,000 as early as on Thursday (2). A lift whisked visitors up to the observation platform 50 m above the ground (3).



1



"The Wirtgen Group's exhibition presentation is incredible. I'm not going to bother visiting other manufacturers." **Francois Pelletier, President & Board member, Les Construction HDF Inc., Canada**



3



"We exclusively use machines built by Vögele because they're the best."

Daniel Sperlich,
Foreman, Michael
Gärtner GmbH



1



"We have mill-
ing machines and
slipform pavers from
Wirtgen, pavers from
Vögele and compac-
tors from Hamm. For
us, they are the No. 1
machines."

Bollineni Seenaiiah,
Managing Director,
BSC PL Infrastruc-
ture Ltd., India





2



"Asphalt paving is our profession and the Wirtgen Group is showcasing the right machines to bring our plans to fruition."

Norman Wille,
engineering firm
Grandpierre & Wille,
Germany

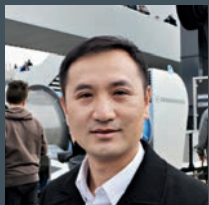


3



Likeable: The managing directors and board members are also thrilled with the Group's technologies (1). Confidence: Rädlinger also uses machines built by the Wirtgen Group's system partner Streumaster in its own machine pool (2). Always bright and cheerful, even when things are at their busiest - the team from our Info desk (3).

The Benninghoven trade fair team is an invaluable addition to the large Wirtgen Group family. Well done, team(1)! The Wirtgen Group Road Club for users and machine operators was always packed (2). High-ranking visitor: Sigmar Gabriel, Federal Minister for Economic Affairs and Energy (3).



"We are thinking of buying Benninghoven plants. Natural resources are limited, so it would serve the interests of future generations to recycle and reuse material."

Lin Zhiyong,
General Manager
of Mechanized Con-
struction Company
at Guangzhou Mu-
nicipal Facilities



LOOK AHEAD TO THE 2ND HALF OF 2016

Note!

The Wirtgen Group will also be presenting its machines worldwide in the second half of 2016. The most important exhibitions and trade fairs are summarized here.

September

Neumünster, Deutschland
NordBau 2016
07.09. - 11.09.2016



Las Vegas, USA
Minexpo 2016
26.09. - 28.09.2016



November

Shanghai, China
bauma China 2016
22.11. - 25.11.2016

bauma
China 2016

December


Delhi, Indien
bc India
12.12. - 15.12.2016



CLOSE TO OUR CUSTOMERS

 **WIRTGEN GROUP**

Real heroes!

 www.wirtgen-group.com/bauma

SUCCESS IS MANMADE. Our highly motivated assembly team played a very special part in assuring the WIRTGEN GROUP's successful presence at bauma 2016. The multi-brand team not only built our trade fair stand, but also impressively demonstrated what it is that makes the WIRTGEN GROUP so strong: everything is possible when you work together in a team. Thanks, lads!

 www.wirtgen-group.com

WIRTGEN / VÖGELE / HAMM / KLEEMANN / BENNINGHOVEN

Wirtgen Group trainees presented
46 LIVE SHOWS during the complete
exhibition period.

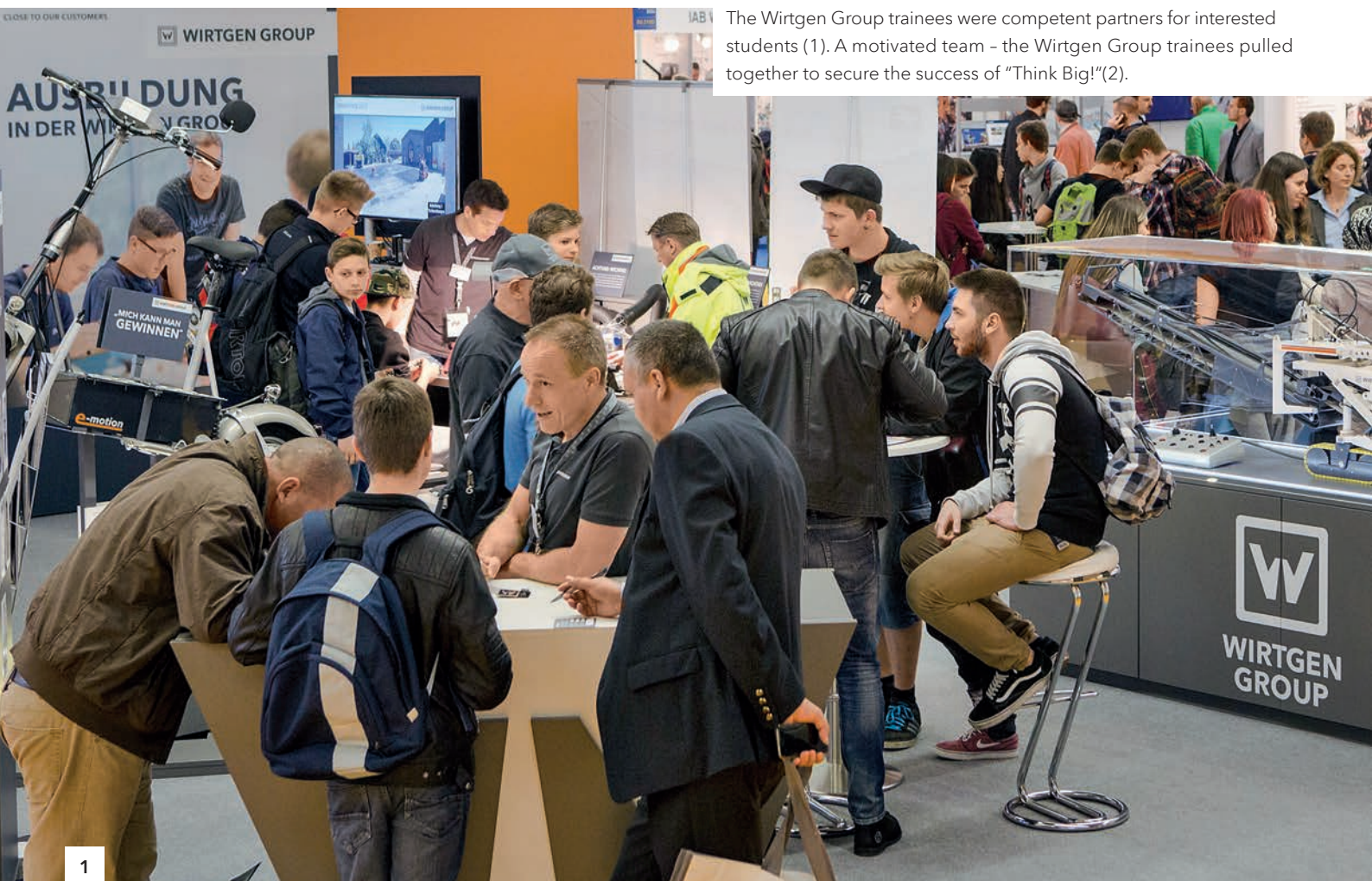


THINK BIG!

Big stage

In the context of "Think Big!", Wirtgen Group trainees inspired other young people to consider technical careers while highlighting the Group's many advantages as an employer.





The Wirtgen Group trainees were competent partners for interested students (1). A motivated team - the Wirtgen Group trainees pulled together to secure the success of "Think Big!"(2).



Think Big!" is a separate micro-event organized by young talents within bauma for students aged between 12 and 18. A total of 16 companies, training institutions and associations used the 3,000-m² exhibition area of the "Think Big!" project to present information on the various opportunities for basic and further training in the industry. The Wirtgen Group trainees were in on the action. With their live shows and hands-on activities at the information desk, they gave a practical demonstration of just how exciting and varied vocational training in different trades can be in the Wirtgen Group. Germany's Vice-Chancellor Sigmar Gabriel also seized the opportunity to learn more. He was impressed when he visited the trainees in the exhibition area in Hall B0 on Monday. "Think Big!" was organized by the German Engineering Association VDMA in cooperation with Messe München.

Vocational training in action

The 20-minute stage shows "Workshop Live" were a highlight of the exhibition. Two presenters interviewed the trainees about their training vocations while they worked on construction machines. The Wirtgen Group trainees had brought along a Wirtgen small milling machine W 60 Ri for this purpose. They used the machine to demonstrate troubleshooting procedures using the WIDIAG diagnostic system and replaced cutting tools in the milling drum during their on-stage shows. Ever eloquent and friendly, they explained the various components produced in different training vocations to an interested audience.

"From the planning and assembly to our activities at the trade fair - we always worked together as a team. That not only creates a bond, but also boosts your own self-confidence," reports Paul Herwerth, a third-year mechatronics trainee describing his experience of bauma in the team of Wirtgen Group trainees.

Joining forces

The numerous hands-on activities at the Wirtgen Group information desk were also well received. Visitors were equally impressed by the soldering of circuit boards and the robot built by the trainees themselves, as well as by the presentation of trainees' final projects. Visitors flocked to see E-Motion - a battery-powered scooter licensed to drive on public

"Mastering this challenge builds immense self-confidence. It was a great experience."

Philipp Hallerbach,
trainee at Wirtgen



roads: trainees had devoted innumerable hours of work to this electrically driven scooter which was raffled at the end of the exhibition. Questions from interested students were competently answered by the trainees themselves, supported by their instructors. "I am proud of our youngsters and the fervor with which they presented themselves and our company here. It was a strong team performance and every single one of them will profit personally from the experience," says Helmut Hecking, Head of Training at Wirtgen, viewing the large crowds thronging the Wirtgen Group stand with satisfaction. "In live shows too, our trainees were able to show just what they're capable of. All in all, the whole event was a resounding success," says Hecking.

12,000

STUDENTS from 230 schools visited "Think Big!" at bauma this year.

14

APPROVED TRAINING VOCATIONS are offered by the Wirtgen Group

Actively shaping the future

Training has always been a matter of high priority for the Group. The Wirtgen Group has 310 trainees in its various German brand headquarters and more than a third of the core workforce obtained their qualifications internally in approved training vocations. The basic philosophy is to train the future workforce internally - a worthwhile investment in future security for both parties, and indeed, so far the Group's constant growth has made it possible to offer almost all trainees a long-term employment contract. ■

➤ www.wirtgen-group.com

PHILIPPINES: AID PROJECT IN CEBU CITY

Toward a brighter future

Thousands of minors are forced into prostitution in the port city of Cebu City. A new aid project set up at the edge of a red-light district by the charity group "Kinder in Not" e.V. offers an escape from need and poverty.



KINDER IN NOT E.V.

CEBU CITY, PHILIPPINES

70

pre-school children are to be prepared for school in the new aid project - accompanied by teachers and students.



The facility, which is still under construction, is also intended for schoolchildren and their mothers. The service covers:

- help with homework
- free daily meals
- preparation for school
- support for mothers

➤ www.kinder-in-not.de



ENCOURAGEMENT In spite of their apparent lack of prospects, the children can take heart. The aid project offers them not only meals and education but also the attention and care that are so important for them.



T

housands of minors are forced into prostitution in the port city of Cebu City. A new aid project set up at the edge of a red-light district by the charity group "Kinder in Not" e.V. offers an escape from need and poverty.

It is estimated that more than 10,000 mostly underage girls and women are forced into prostitution in the red-light districts of the port city of Cebu City. Criminal smuggling rings lure the girls into the city from the small islands nearby with false promises of well-paid work in a restaurant or factory. The girls follow willingly, hoping to support their families back home. On their arrival in Cebu City the nightmare begins.

They are beaten, starved, and plied with alcohol and drugs to force them into submission. To discourage them from running away, their tormenters threaten to fetch their brothers and sisters to Cebu as well. The situation of these young women, alone and unprotected, without money, and marginalized within the city, seems hopeless.

Extended aid

Many pre-school and school children live in terrible conditions in one of these red-light districts. There was no kindergarten for the smallest of them, and the older ones had practically nowhere to do their homework in peace. Father Max asked us to support him with his work in these difficult surroundings. Our joint projects to date have concentrated on the refuse dumps in Cebu City and a cemetery, in which many of the poorest families live. It is the children who generally suffer most and who are the most vulnerable. But there is also hope of escaping this vicious circle if help is forthcoming early enough.

On the ground floor of our new building some seventy pre-school children will be looked after and prepared for school by two teachers and other assistants. On the middle floor, schoolchildren of all ages will be able to do their homework assisted by a teacher and students. The top floor will have a conference room for the children's mothers and also for training courses for the schoolchildren. As the health of the boys and girls gives cause for concern, they will also be offered free meals. The kitchen is currently under construction. The aim of the project is to give ongoing aid to children in the form of appropriate support measures until they finish school.

Another school building in Alegria in the south of Cebu island is almost finished. This unplanned structure caused great financial problems for the charity group "Kinder in Not" e.V. On a visit to St. Peter Academy junior high school in Alegria, which is attended by over 800 children from the poorest families, serious safety violations were identified by the education authority in two large classrooms. As the building is already over thirty years old, it was no longer worthwhile refurbishing or repairing



1



2



3

The community center in a red-light district in Cebu City (1) will soon open. Enlargement of Alegria high-school with the aid of the Wirtgen Group (2). Education helps the pupils of St. Peter Academy to help themselves.

it. New windows had to be installed, the noise level in the classrooms was much too high, and there were no emergency exits in the case of fire.

Successful training offers an opportunity

As only half of the sum required to finance the construction of four large classrooms had been secured, the Wirtgen Group offered to provide the missing amount to enable construction to start without delay. After the school vacation, the boys and girls in the fourth and fifth grades will move into the new school building, ensuring that they do not have to interrupt their schooling or travel long distances to school.

This year, around 200 former pupils of St. Peter Academy will complete their vocational training in Cebu City with the financial aid of their sponsors and the charity group "Kinder in Not" e.V. After they have found jobs, they will be able to lead independent lives. They have managed to break out of the cycle of poverty in which their families in Alegria have been caught and they will be able to support these families in future. In this way, we will have achieved one of our main goals. ■



Best regards,

Gisela Wirtgen
(Chairperson)
Charity Group "Kinder in Not e.V."



BAUMA CHARITY ALLIANCE

TRADE FAIR PREMIERE

For the first time, the charity group "Kinder in Not" e.V. presented itself at the bauma Charity Alliance. The Alliance offers a platform to education, environment, health, nutrition and social integration projects mounted by the construction industry to improve the quality of life of needy people in or from trouble spots, newly industrialized countries or developing countries. The Alliance's presentation at bauma also marked the launch of a worldwide charity network which aims to raise awareness of companies' commitment to social issues.



CHARITY GROUP "CHILDREN IN NEED"

YOU TOO CAN HELP CHILDREN IN NEED!

Our projects are designed to provide long-term assistance. Every cent brings us closer to our goal.

Account for donations

Sparkasse Neuwied

Account number: 012 022 752

Sort code: 574 501 20

IBAN: DE87 5745 0120 0012 0227 52

SWIFT-BIC: MALADE51NWD

Raiffeisenbank Neustadt e.G.

IBAN: DE16 5706 9238 0100 0527 24

BIC: GENODE1ASN

The association

was founded in 1983 on the initiative of Gisela Wirtgen, is a non-profit organization helping children in need to help themselves,

is non-political and non-confessional, maintains aid projects in the Philippines, India and Brazil

Further information

➤ www.kinder-in-not.de



CLOSE TO OUR CUSTOMERS



WIRTGEN GROUP



To be continued

IT WAS GREAT. The WIRTGEN GROUP wishes to thank all visitors for their strong interest and firm bond with our group of companies. Our thanks are also due to the dedicated WIRTGEN GROUP trade fair team for their enthusiastic efforts to make our trade fair presence at bauma a resounding success this year, too.

 www.wirtgen-group.com

WIRTGEN / VÖGELE / HAMM / KLEEMANN / BENNINGHOVEN