

FormworkPress

Professional Formwork News

IV/2024



Unique bridge piers

Combined formwork for top results – page 16

САБАПТС
СТРОИТЕЛЬСТВО

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Imprint

Site photos show situations which do not always depict the final assembly of formwork with regard to safety regulations. Imprint: Edition IV/2024. Publisher: MEVA Schalungs-Systeme GmbH, Industriestr. 5, D-72221 Haiterbach. Layout: MEVA. Reprint and re-use of any editorial content only by copyright permission. We accept no liability for the content of external internet sites, nor for a violation of privacy or any other law arising from these.

“We also demonstrate our strengths in infrastructure construction: technical competence, efficient products and bespoke services.”

Dear Readers,

Sometimes fruitful business partnerships come about in unexpected ways. Not long ago, the managing director of a construction company in Lisbon recalled past working visits to Germany. While there, he had come to appreciate the efficiency and cost-effectiveness of MEVA formwork systems. He searched on the Internet, picked up the phone and called our Berlin office. Thus, our first business with a customer in Portugal came about. Until then, “Europe’s balcony” was a blank spot on our sales map. The customer, the construction company Neourbano, is happy with our MevaDec slab formwork. After all, efficient construction progress, effortless working practices and top results are in demand everywhere. To find out how this cooperation came about, read the report that starts on page 22.

While residential housing construction is presently booming in Portugal, the development of urgently required living space has cooled down significantly in many regions of Europe due to high interest rates and material prices as well as a shortage of skilled workers. Construction companies and suppliers like MEVA are increasingly focusing on other business areas. We also demonstrate our strengths in infrastructure construction: technical competence, efficient products and bespoke services. We can read all about this in this issue of Formwork-Press and – I can reveal this much already – also in future issues.

In Hungary the clever combination of standard formwork systems and special solutions contributed to the successful construction of individually designed motorway bridge piers. But also generally speaking, MEVA is helping construction companies reach for the skies – efficiently and with excellent concrete quality in Switzerland, quickly and safely using climbing systems during the construction of skyscrapers in Manchester.

Getting back to Hungary: We have been present in this country for more than 30 years and our subsidiary in the capital city, Budapest, had been threatening to burst at the seams for quite some time. We have now moved to a new site with a spacious workshop building and offices, modern equipment, extensive storage areas and optimum transport links. From here, we are able to serve our customers in Hungary and adjacent regions of neighbouring countries faster and better. See page 19.

I wish you a pleasant read.



Florian F. Dinger,
Owner and Managing Director
of MEVA Schalungs-Systeme GmbH



News

Information about MEVA



FormworkPress is going digital

In the previous issue of our customer magazine FormworkPress, we invited you to take part in a survey. This ended a few weeks ago and a large number of readers took part in it. Among other things, we wanted to know whether, in addition to our online edition, our magazine should continue to be delivered in a print version and sent by post.

The vote was unequivocal: A large majority of our readers mainly consume FormworkPress digitally. The acceptance of digital media is continuing to increase and their usage is expanding. Moreover, we consider the result of the survey to be a vote in favour of conserving valuable resources if the magazine is not printed and transported to its recipients.

We will also take the results of the vote regarding content wishes into greater consideration in future. FormworkPress, which is available worldwide in six languages and in three different versions, will focus more strongly in future on being a magazine from professionals for professionals.

Expansion of MEVA's Plant 3

First of all came continuous rain and then snow and severe frost ... The white winter in the Northern Black Forest impaired the work on MEVA's new Plant 3 at its headquarters in Haiterbach, Germany. It was necessary to make up for a delay of several weeks during the construction of the new factory building. However, the overall schedule went strictly according to plan and further delays were avoided. In a few weeks time, the new Plant 3, which is being built onto Plant 4 on a single site, will be fully operational.

The new 90 x 25 m factory building comprises a modern office wing, skylights in the crown of the roof, and walls in architectural concrete quality. The modernization and investment in Plant 3 will help MEVA further improve the company's competitiveness in the long term. By the middle of this year the special formwork construction, the preassembly, the fixture construction, the cleaning of large parts as well as the training area for the apprentices will be located in the same building. This will result in simpler processes and efficient logistics as well as excellent working conditions for the employees.



Expertise in bridge construction

The world of bridge construction is fascinating. No two tasks are the same, and the safety and quality requirements are challenging. The products and solutions supplied by MEVA, which are used in projects all over the world, are as varied and flexible as the tasks involved in bridge construction are wide-ranging.

Information on this topic has been compiled in an eight-page brochure available for download on our website. It includes examples of successfully completed construction projects and a brief overview of the factors that characterise MEVA's service portfolio: innovative technologies and first-class engineering expertise in bespoke solutions and the fulfilment of the highest quality standards. This ranges from the formwork planning and intensive on-site support to the successful completion of projects and all-round carefree formwork service.

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15 years of MEVA India

A milestone was celebrated recently in Navi Mumbai: the 15th anniversary of MEVA India. Since the beginning of 2009 a success story has been underway. During the anniversary celebration, which was also attended by MEVA's owner and managing director, Florian F. Dingler and international regional director Tarc Fröhlich, eleven members of staff who have worked for MEVA with dedication for many years were honoured.

Exceedingly cost-effective and efficient wall and slab formwork as well as climbing systems, which were developed specifically for this market, have proven their worth during numerous successful projects. With their MEVA formwork expertise, authorized business partners are responsible for selling and renting formwork systems as well as carrying out formwork projects.

Services such as competent formwork planning by a qualified and experienced design team are also in strong demand. The MEVA engineers offer solutions not only for customers in India but also for subsidiaries and partners worldwide. Furthermore, our range of services includes team training for workers on the construction sites in order to improve their skills.

Harmonious “Dreiklang” in Aarau

A hospital is coming into being with the help of BIM and MEVA formwork

Marti AG Zürich is extending the hospital complex in the capital of the eponymous canton in Aarau through the construction of an extensive replacement building involving systematic use of BIM. MEVA delivered the wall formwork including safety system as well as pre-assembled shaft platforms for the cores.

The hospital building of the Kantonsspital Aarau with a surface area of 145 x 120 m is almost 50 m high and consists of two staggered basements and ten upper floors plus an equipment floor. In future, 472 inpatient beds, 130 places in the day clinic and 18 operating rooms will be available. The hospital will be built in accordance with Minergie P-ECO, the highest building standard presently in use, thus ensuring that high demands on quality, comfort and energy consumption are fulfilled. Once it has been opened in 2026, the plan is to demolish the existing building and to enlarge and redesign the park in the hospital’s grounds.

The building as a whole is called “Dreiklang”, German for the musical term “triad”, as the three main areas form a single harmonious unit. The outpatient clinics are directly connected to the four-storey base with functional areas. On top of this sits

a six-storey, square superstructure (75 x 75 m) for the wards.

Tablet computers instead of paper

The building shell was completed in less than two years. Up to 140 people worked on the construction site at the same time and two in-situ concrete plants delivered 62,000 m³ of concrete. 9,300 tons of rebar material and 235,000 m² of formwork were used. This is all the more astonishing as the construction site planning was performed without paper using 3D models by means of building information modelling (BIM). 20 tablet computers were in use on the construction site, thus enabling team supervisors and foremen to access the latest plans at all times. Five “BIM planning huts” spread over the construction site served as information and meeting points.

The Marti employees responsible were very enthusiastic about the improvements achieved with regard to efficiency, precision and communication thanks to the use of BIM. To date, the cantonal hospital is the total contractor’s, i.e. Implenia AG’s, largest project to be implemented using the BIM-to-field method. Approximately 200 submodels were merged to form a single overall model. MEVA



The large-format wall formwork was combined with the Securit-Basic safety system.



Top left: The cantonal hospital was built in accordance with Minergie P-ECO, the highest building standard presently in use. Top: To date, the hospital is the largest project to be implemented by total contractor Implenia AG using the BIM-to-field method. On the left: Display, keyboard, mouse: one of five “BIM planning huts” spread over the construction site.

was responsible for planning the wall formwork and working platforms and also had a supplementary order for the creation of BIM-compatible models for all the shaft walls. This was achieved together with our partner company BIM².

Strong formwork for strong walls

To construct walls with storey heights up to 5.30 m, Marti used a MEVA formwork system that has already proved its worth during numerous projects performed by the well-known construction company. The high-performance wall formwork system Mammut 350 with a full-surface fresh concrete load capacity of 100 kN/m² allows for short pouring cycles for heights up to 4 m and thus rapid construction progress. The simple assembly with several corner configurations for a variety of floor plans also speeds up the work.

The large-format formwork panels (350/250) with a surface area of 8,75 m² were combined with the SecuritBasic safety system with working platforms. This is easily installed on the Mammut 350 panels using a single part, the flange screw, and, with a load-bearing capacity up to 200 kg/m², guarantees safety throughout the assembly and concrete pouring work.

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Project data

- **Project**
 - Replacement hospital building “Dreiklang”, Aarau, Switzerland
- **Total Contractor**
 - Implenia AG
- **Contractors**
 - Marti AG, Zurich, Switzerland
- **Civil engineer**
 - WaltGalmarini AG, Zurich, Switzerland
- **Architects**
 - Burckhardt + Partner AG, wörner traxler richter
- **MEVA systems**
 - Mammut 350 wall formwork
 - SecuritBasic safety system
 - Shaft platforms
- **Engineering and support**
 - MEVA Schalungs-Systeme AG, Seon, Switzerland

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With support frames below ground level

The basements were partly planned and built using single-sided wall formwork – once again using Mammut 350. The task of safely transferring the concrete pressure via the formwork panels into the foundation was performed by MEVA’s STB 450 support frames. They are the idea solution when pouring against earth walls and the sides of temporary construction pits, and take up large loads in restricted spaces. STB 450 support frames are only 2.45 m deep, fit on every truck, can be stored in a space-saving manner, and can be easily transported by crane or moved on swivel-type castors.

Bespoke shaft platforms

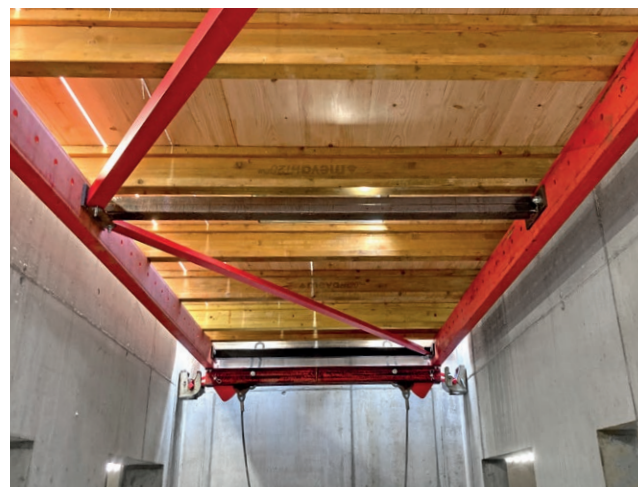
The building has ten stairwell and elevator cores. To enable the work to be performed under comfortable conditions and in accordance with the most stringent safety requirements, two to three – a total of 23 – bespoke shaft platforms were used for each core, in some cases with trailing platforms. They were planned by MEVA and delivered to the construction site as pre-assembled units.

The Dreiklang’s stairwells shine in architectural concrete quality as do the entrance area and other areas of the building that are publicly accessible. Due to offset tie holes, Mammut 350 with its symmetrical tie hole and joint pattern is ideally suited for this purpose and enhances the overall architectural appearance. The system, like all MEVA formwork systems, is equipped with alkus all-plastic facings as standard. These can be cleaned in a resource-conserving manner, repaired on the construction site and are suitable for about 1,500 high-quality applications over the course of their long service life.

Own material and RentalPlus

The material used came mainly from Marti’s own stock. This was supplemented by rental equipment supplied by MEVA Switzerland in Seon. The construction company chose the comprehensive RentalPlus package and thus enjoyed costing certainty right from the start, as alongside rental equipment and logistics, this package also includes all other services such as cleaning and repairs.

On the left: The high-performance Mammut 350 wall formwork allows for short pouring cycles. Top right: 23 bespoke shaft platforms were used for safe and comfortable work on the ten stairwell and elevator cores. Below: The shaft platforms were planned by MEVA and delivered to the construction site as pre-assembled units.



Practical Tip

Fundamentally simple

Doing away with residual gaps in formwork using the compensation plate

Who is not familiar with this? When forming foundations and floor slabs, gaps remain between the formwork panels. These residual gaps must be compensated for by means of arduous and time-consuming manual work using wooden parts that – having been contaminated with concrete – end up as hazardous waste afterwards.

This can be done differently, in a matter of seconds and without producing waste: Compensation plates are simply placed over the adjacent formwork panels, without the use of tools, accessories or reinforcements, and compensate for foundation formwork with a height of 45 to 55 cm and residual gaps up to a width of 55 cm. The galvanized, durable and stable compensation plate does not need to be fixed in place, as it is simply pressed on to the formwork panels by the concrete pressure. After stripping, the galvanized, durable sheet metal parts are cleaned using a minimum of resources and are then ready for the next application.

The groove visible in the set concrete caused by the 4 mm

thick compensation plate is no longer visible when the floor slab has been poured or the foundation has been filled in with soil. The compensation plate is available for AluFix, AluStar and other formwork systems with a frame thickness of 10 cm or 12 cm (StarTec, StarTec XT).

→ Advantages at a glance

- No wood, no (special) waste
- No sawing work - greater safety
- Time saving
- Durable and sustainable



The compensation plates are simply laid over the formwork panels that have already been put in place, here AluFix. The 4 mm deep groove (bottom right) is no longer visible afterwards.



In the Skies above Manc-hattan

The Manchester skyline is being changed using MEVA climbing formwork

An increasing number of skyscrapers are dominating the skyline in the English city of Manchester. The region's leading property developer, Renaker Build Ltd, which has already built more than 6,000 new apartments, is primarily responsible for the striking change to the urban landscape.

Since 2006 Renaker has been reshaping districts that have seen better days into up-and-coming neighbourhoods. The focus lies on the renovation of brownfield sites in the heart of Manchester, where a new landscape with high-rise towers is coming into being that is affectionately referred to as "Manc-hattan". MEVA formwork and climbing systems play an important role in the realisation of prestigious projects such as New Jackson, Trinity Islands and Colliers Yard. Here, the MAC system (MEVA Automatic Climbing) is being used, which climbs hydraulically with the formwork during the erection of the concrete core walls. This system proved advantageous for Renaker, as it enables rapid construction processes with little effort and without using a crane and provides for safe and comfortable working conditions.

As a reaction to the increasing demand for high-rise buildings and the construction of their cores, Renaker purchased a large stock of MAC climbing systems and Mammut 350 wall formwork. To construct the columns, the lightweight, crane-in-

dependent AluStar system is used. Due to their flexibility, all these systems can be easily adapted to suit varying geometries and changing requirements. Hence, they pay dividends in the long term when used for different construction projects.

For buildings with 30 storeys or more, Renaker prefers the globally tried-and-tested, automatic MAC climbing system to every conventional jumpform or slipform system – for good reasons: It not only enables the construction of the core after initial assembly to be crane-independent (exception: depositing the rebar material on the main working platform), MAC also provides the workers with a comfortable working environment that is protected from the elements at all times.

The MAC system – an overview

The MAC climbing system lifts the core wall formwork and all platforms hydraulically in a single operation and enables quick and efficient working practices without the help of a crane even at great heights. The hydraulic unit is operated by only one single person. The complete unit can be raised by 4.5 m in only 60 minutes using a minimum of personnel. Non-return valves in each 20-ton cylinder safeguard the hydraulics. This efficient climbing method shortens the construction process significantly without compromising safety – unlike systems with individual climbing platforms.

MAC climbs compactly and as a complete unit. The closed-off working area offers comfortable, safe conditions.

Inside-formwork boxes were assembled next to the core and then lifted into place.





New Renaker construction project in the Jackson Street.

Cycle times of only four days

Where efficient cycle times are important, MAC plays to its strengths. During some projects, the Renaker construction site team achieved very short cycle times of only four days for stripping, climbing, rebar and box-out installation, and reinstallation of the formwork. Sometimes the cycle times were so efficient that the team responsible for the core construction had to interrupt its work to allow the construction of the previous storeys to catch up.

Instead of anchors, the MAC system employs re-usable bearing pockets for support. These pockets are removed from the trailing platform and reused during the next climbing stage. This reduces the material costs, as no lost built-in parts are left over in the concrete. If there is little space available, parts belonging to the climbing system can be pre-assembled outside the construction site and combined into larger assemblies before the units are lifted into place.

Integrated platforms and ladders guarantee a high degree of work safety. The main working platform is completely free of obstructions and offers a large surface area for materials such as rebars. The all-

round enclosure with cladding sheets, for example, not only makes it possible to work in all weathers, it also offers privacy as well as ample advertising space. Special requirements such as concrete placing booms and external-staircase accesses can be integrated into the MAC design.

Large-scale concrete placing

The clever design of the MAC climbing system enables the formwork to be quickly and simply adapted to suit varying building geometries. Large units made up of several formwork panels that are connected to each other can be relocated without problem in one operation. This saves a lot of time when installing and stripping the formwork. All MEVA wall formwork systems can be used together with MAC, as can the customer's own formwork.

The robust, large-format Mammut 350 panels (350/250 = 8.75 m²) with a full-surface fresh-concrete pressure capacity of 100 kN/m² optimally supplement the climbing system. The suspended wall formwork can be repositioned precisely by

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Proven track record

Renaker has been working with MEVA on large projects in Manchester since 2016 and trusts its know-how. Both the management and the construction site teams have come to appreciate MAC due to its efficiency, flexibility and safety. The following projects testify to the comprehensive cooperation between the two companies:

Completed projects

- **Deansgate Square:** four residential towers with 40, 47, 53 and 67 storeys and more than 1,500 apartments. The 201 m tall South Tower is the tallest building in Manchester and the second-tallest residential building in Great Britain.
- **Crown Street C2 (Elizabeth Tower):** This residential tower comprises 484 apartments on 51 storeys. A swimming pool, a gym and the communal garden are located on the 44th floor.
- **Trinity Riverview:** 35-storey building with 332 apartments.
- **Greengate Plot H&J:** 50-storey building with 559 apartments and commercial space.
- **VITA Union T1:** 32-storey building with 380 apartments and flexible commercial space.
- **Crown Street C5 ("Three60"):** 51-storey residential building with a circular floor plan and spiral-shaped panelling.

Further projects, in progress

- **Greengate Plot C:** one of three high-rise buildings at Colliers Yard, with 42 storeys and 420 to 444 apartments.
- **VITA Union T2:** residential tower with 32 storeys. The Union buildings make up the new residential nucleus of St. John's, one of the most important renovation projects in Manchester.
- **Trinity Islands:** four skyscrapers with 39, 48, 55 and 60 storeys. The project for the construction of 1,950 new apartments is planned to last nine years. One of the towers will be the second-tallest in Manchester.
- **One Port Street:** project with 33 storeys and first-class comfort, including a 185 m² swimming pool.

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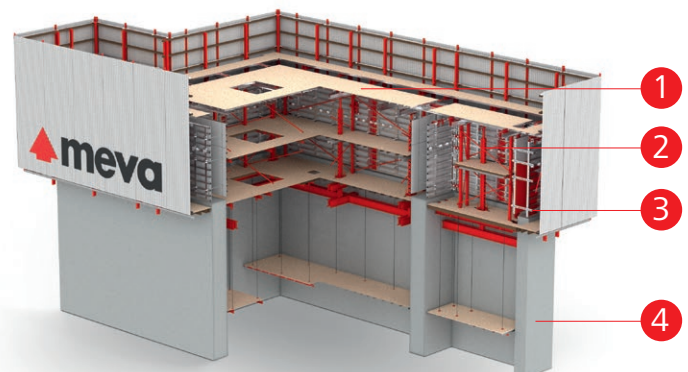
hand with the help of support frames on the inward-facing side per three-way adjustment and adapted to suit the building geometry. The formwork is retracted and lowered in order to make room for the rebar work, for example. This pays off during Renaker projects: Large wall panel areas were relocated in one single operation.

Deansgate Square

An example of the efficiency of the duo MAC and Mammut 350 is the Deansgate Square project: Two MAC systems were used in tandem in order to erect one storey with two cores located next to each other every five days. The systems were then each modified and used for two further cores. The group of four high-rise buildings in the centre of Manchester was completed punctually within the desired time frame thanks to the speedy core construction method and rapid relocation of the MAC.

To ensure correct installation on-site, a highly specialised team of MAC experts from the MEVA subsidiaries in Great Britain and Singapore was involved in the planning. The exchange of information at an early stage and close cooperation with the principal ensured that the planning and construction were performed smoothly. The precise coordination between all parties involved in the

Platforms, from above: 1) Main working platform: operation of the power unit, storage and attachment of the rebar material; 2) and 3) Attachment of the rebar material / access to formwork accessories; 4) Trailing platform / access to the concrete beams.





The formwork is suspended from the steel grid.



The formwork is precisely aligned by means of three-way adjustment.

project had a high priority. MAC and Mammut 350 were adapted from cycle to cycle in order to compensate for floor plans that deviated from each other with regard to the details or special forms such as different door openings.

Tried and tested successfully worldwide

The MAC system has already proven it worth again and again and was a decisive factor for the successful construction of some of the tallest buildings in countries such as India, Australia or the Philippines. The 205 meter high Roche Tower II in Basel, to which the stringent Swiss safety requirements apply, was even completed ahead of schedule.

The hanging Mammut panels leave enough space for the rebars.



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Project data

- **Project**
 - New construction of high-rise residential buildings in Manchester, UK
- **Contractor**
 - Renaker Build Ltd, Manchester, UK
- **MEVA systems**
 - MAC climbing system
 - Mammut 350 wall formwork
 - AluStar wall formwork
- **Engineering and support**
 - MEVA Formwork Systems Ltd, Tamworth, UK
 - MEVA Formwork Systems Pte Ltd, Singapore

Joint and tie hole pattern in focus

Extremely successful new buildings on the campus in Lemgo

The formwork planning for two new buildings at the OWL University of Applied Sciences and Arts in Lemgo, Germany was a challenge. However, the result speaks for itself: The buildings shine forth in excellent concrete quality to the full satisfaction of the principal and the architect.

The university requires more laboratories, offices, seminar rooms, lecture halls and storage rooms and is now looking forward to using the new buildings on the campus. House 10 and House 11 have square floor areas of 1,700 and 935 m² respectively, both consisting of a ground floor and two upper floors. PORR Hochbau GmbH, formerly Oevermann Hochbau GmbH, a prestigious regional construction company, was responsible for carrying out this project.

MietePlus – all inclusive

Three MEVA wall formwork systems were used by the team led by construction manager Lukas Kettler and foreman Michael Feismann for varying requirements. The construction company decided to commission MEVA's Rhine/Ruhr office to supply the formwork within the scope of the comprehensive MietePlus package. This ensured costing certainty from the start of the construction work up to its completion, as besides rental equipment and logistics, MietePlus also includes all other services such as cleaning and repairs.

Floor slabs and strip foundations were poured using the hand-set formwork AluStar (panel area of 430 m²). The basis for both buildings was thus quickly laid. The robust Mammut 350 formwork was used to pour columns and Mammut XT formwork was used for the buildings' walls.

Prepared for SB3

Before delivery, all Mammut XT (990 m²) and Mammut 350 (47 m²) panels were prepared by MEVA to achieve SB3 architectural concrete quality – as were alkus all-plastic facings for compensations, reveals and lintels in areas with more stringent requirements. In some areas SB3+ quality was also required, which was achieved through finer grinding and additional seals to prevent concrete bleeding. More than 670 m² (House 10) and 200 m² (House 11) of the wall surfaces now shine forth with surfaces that are worth seeing. The columns were also constructed in SB3 quality. The maximum pouring height was 6.30 m in House 11 (two height-extended 350 cm high panels) and 5.55 m in House 10 (350 + 125 + 125 cm).

Formwork planning is teamwork

The principal and the architect didn't want run-of-the-mill construction but rather set great store by squeaky clean architectural concrete surfaces. At times, this made the formwork planning a challenge for MEVA, but at the end of the day the desired results were always achieved. For example, to avoid compensations in the 24 cm thick walls to the great-

The architectural concrete quality of the up to 6.30 m high concrete walls convinces. Right-hand photo: Here concrete was poured up to a height of 5.55 m.





The height-extended formwork panels were transported by crane.

est extent possible and to fulfil the requirements of an SB3/SB3+ finish, the use of corners on the Mammut XT formwork was dispensed with entirely. The planning featured only straight walls with rebend connections.

Particular attention was given to the balanced joint and tie hole pattern that strongly influenced the entire planning process. Last but not least, numerous door and window openings also complicated the production of the optimum grid pattern. Hence, in close cooperation with the construction manager, the engineers and the architect, the optimum solution was defined and implemented in each case.

Advantages exploited using Mammut XT

The construction company Oevermann decided up front to profit from the flexibility of MEVA's Mammut XT formwork. This has fully integrated, flush combination tie holes and allows three different tying methods to be used. During this project, single-sided tying using XT taper ties was used for the ground floor. For the subsequent storeys with wall thicknesses of 32 cm, conventional tying using tie rods, plastic tubes and cones for plastic tubes was the ideal choice.

As the work was performed using a large number of rebend connections to reinforce the construction joints, no anchors were to be planned in the adja-

cent wall sections. This was due to the high expectations with regard to the finish as well as technical considerations, as due to the rebend connections the tie rods could only be used with difficulty or – at wall intersections – could not be used at all.

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Project data

- **Project**
 - New buildings at the OWL University of Applied Sciences and Arts, Lemgo, Germany
- **Principal**
 - Bau- und Liegenschaftsbetrieb NRW, Bielefeld office, Germany
- **Contractor**
 - PORR Hochbau GmbH, formerly Oevermann Hochbau GmbH
- **MEVA systems**
 - Mammut XT wall formwork
 - Mammut 350 wall formwork
 - AluStar wall formwork
- **Engineering and support**
 - MEVA Schalungs-Systeme GmbH, Rhine/Ruhr office

Attractive bridge piers

Standard and special formwork cleverly combined during a Hungarian project

In the south of Hungary the last gap on the M6 motorway is being closed. The centrepiece of the 20 km long section between Bóly and Ivándárda on the border with Croatia is a viaduct over the Majsí river. The uniquely designed support structure was realised according to plan using technical solutions provided by MEVA.

The Hungarian subsidiary of the construction company STRABAG was primarily responsible for the construction of the new bridge. The international transport route will connect Budapest with Osijek in Croatia and enable a quick connection to the Adriatic coast. For the construction of this bridge structure, STRABAG Építő Kft. decided to

use formwork and shoring tower systems that were planned and delivered by MEVA Hungary and significantly contributed to the timely progress of the construction work and to the achievement of the desired quality.

Challenging pier design

The formwork planning for the bridge piers, which stand next to each other in pairs, was one of the project's challenges. This was due to their unique design with flat and variably curved surfaces as well as striking vertical grooves in the pier shafts. Moreover, high-quality surface finishes and a pleasing joint and tie hole pattern were required. Last but not least, the implementation of the formwork planning for the pier cross-section was made more

The motorway bridge is supported by pairs of piers. The upper edge of every pier shaft is elliptically shaped rather than, as is normally the case, horizontal.





The MT 60 system supports the formwork and the working platforms, and Triplex heavy-duty props transfer the fresh-concrete pressure into the ground.

difficult by the small radius on the narrow sides and the penetration surfaces. The planning engineers from MEVA Zsalurendszerek Zrt. correspondingly doubled up the facings on the pier shaft grooves. Lastly, panels from three MEVA standard systems were combined with each other as well as with special formwork panels and installed on-site: Radius circular formwork, Circo column formwork and Mammut 350 wall formwork.

Quick cycles up to a height of 7 m

Despite the custom-designed pier form, only a minimum quantity of tailor-made special formwork panels were required. The widespread use of standard MEVA formwork enabled rapid construction progress and simple and economical work processes. The formwork was thus quickly erected and the piers were already standing after a short period of time. As the first pouring stage was up to a height of 7 m, the construction of the up to 14 m high piers was completed in two cycles. Once the lower section had hardened, the quickly and easily assembled MT 60 shoring tower system was set up and working platforms installed so that the final height was completed comfortably and safely.

MEP is adapted to the piers

Now only the pier caps needed to be built. Their geometry is similar to the head of a hammer whose bottom surface takes on the elliptical shape of the

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Project data

- **Project**
 - Motorway bridge on the M6, Hungary
- **Principal**
 - Építési és Közlekedési Minisztérium (Ministry of Construction and Transport), Hungary
- **Contractor**
 - STRABAG Építő Kft., Budapest, Hungary
- **MEVA systems**
 - Special formwork
 - Mammut 350 wall formwork
 - Radius circular formwork
 - MEP shoring tower system
 - MT 60 shoring tower system
- **Engineering and support**
 - MEVA Zsalurendszerek Zrt., Budapest, Hungary

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Clockwise from the top left: Several MEVA systems were combined. Circo circular column formwork was used to form the outer corners. Special wooden formwork panels suitable for multiple use were employed, here for the pier heads. The MEP shoring tower was adapted without problem to suit the elliptically shaped piers; the result: absolute perfection!

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pier. The MEP shoring tower system was the ideal solution here. It guarantees a high degree of stability even at large heights, and due to the flexibility of this system, it was possible to simply adapt the shoring towers to suit the small radius of the elliptical (instead of the usual horizontal) working plane and to the penetration surfaces.

The concrete was poured using special formwork panels that were also supplied by MEVA and could be reused multiple times in order to keep the costs as low as possible. The straightforward surfaces were poured using Mammut 350 wall formwork that convinced due to its high fresh-concrete pressure capacity of 100 kN/m².

3D planning instead of paper

Digital plans created using the 3D design software REVIT helped the STRABAG construction team when setting up the formwork and exactly positioning the shoring towers. Thanks to the three-dimensional plans, it was possible to easily understand even the complex geometry of the pier caps and thus perform the construction work transparently.

It was possible to quickly create and, if required, adapt the 3D plans, allowing the foremen to access the latest versions on mobile devices on-site at all times.

Interview

„Services at the highest level“



Managing Director Mihály Botta-Dukát.

The premises used by the MEVA subsidiary in Hungary had become too small. Hence, it has now moved to a new, spacious location in Budapest that has modern equipment and offices. Mihály Botta-Dukát, managing director of MEVA Hungary since 2011, knows the requirements and wishes of the construction industry in his home country better than almost anyone else. He is very happy about the new opportunities offered by the new site on the Dunakeszi industrial estate.

MEVA has been present in Hungary since 1993. How has the business developed since then?

Apart from the period during the global economic crisis in 2008/2009, we have enjoyed continuous growth. Over the course of more than 30 years, we have been able to increase our turnover and the number of employees and customers many times over. During this period countless buildings have come into being with the help of our portfolio.

Which ones for example?

Examples include some remarkable projects such as the football stadium in Felcsút or the market hall in Pécs with captivating arcade arches. Our experienced formwork experts, efficient products, bespoke services and partnership-based cooperation with the customers at all times have contributed to ensuring that even projects involving high

technical and qualitative requirements were always completed successfully. However, we desperately needed more space, and I am delighted that we were able to complete the relocation on time just before Christmas 2023.

How does your new headquarters differ from the old one?

We now have an even better connection to the major road network, an optimum amount of storage space for all relevant MEVA products, and the infrastructure required to install an automated grinding machine and, at a later date, a cutting-edge reconditioning plant for rental formwork. All building services are state of the art and designed for sustainability throughout. For example, the building's heating and cooling systems are environmental friendly due to the use of heat pumps.

Do all customers in Hungary profit from the new location?

Yes, they do. However, we now possess enough capacity to offer our formwork systems and services at the highest level to customers in regions of Austria, Slovakia, Croatia, Serbia and Romania.

The warehouse is extremely spacious. The new building with sustainable building services will be equipped with a state-of-the-art reconditioning plant.



Almost 14 meters in one fell swoop

How Hächler AG pours high walls faster and more cheaply

In Unterengstringen near Zurich a new sorting and recycling plant for PET beverage bottles will start operating shortly. The walls, including freestanding, almost 22 m high and 55 cm thick walls, were constructed in a short space of time to a high level of quality.

The construction company Hächler AG did an excellent job during this project and, based on past experience, relied on the high performance guaranteed by the Mammut XT wall formwork system. The formwork with the integrated XT tie holes – to simply choose between three tying options – allows a maximum fresh-concrete pressure of 100 KN/m² and thus ensures rapid pouring processes with large filling volumes.

Faster with contractor-specific variant

The invitation to tender originally stipulated the use of climbing formwork with cycle heights of approx. 4 m for the construction of the walls. However, for the construction of the freestanding, 55 cm thick walls, Hächler AG's department for building construction and civil engineering drew up a contractor-specific variant – with an initial pouring height of 13.80m followed by two further cycles

each with a height of 4.05 m. A decision that was intended to profit all participants.

The pouring of each 13.80 m cycle required 75 m³ of concrete. This quantity was poured in three stages: The first pouring stage was performed at six in the morning. Having waited for the concrete to harden, the second stage was performed at 11 a.m. and the third at 2 p.m.

To avoid overloading the formwork and the tie rods, the experienced Hächler team optimised the concrete recipe together with the supplier to enable the concrete to set faster. This massively accelerated the processes and ensured that the required eight-month construction period was adhered to.

The formwork was tied from one side using the XT taper tie 23, which also simplified and accelerated the work. Furthermore, the costs for the principal were reduced, as the bespoke solution resulted in fewer reinforcement joints and position surcharges.

Quick and safe with foldable working platforms

With the two additional 4.05 m climbing cycles, the target height of 21.90 m was reached. The





Bottom left-hand photo: With the 13.80 m high first wall stage, time and effort were significantly reduced. The 55 cm thick, freestanding walls were built using Mammut XT. Top: The KAB foldable working platform can be used directly from the stack. The platform folds out and locks in place automatically. Triplex heavy-duty props ensured that the fresh-concrete pressure was transferred directly into the foundation.

KAB foldable working platform provided valuable assistance here in order to meet the stringent Swiss safety requirements with a minimum of installation work. The KAB can be taken quickly and directly from the stack and used as a working and safety scaffold. When folded, it enables space-saving storage and efficient transport. KAB consists of pre-fabricated folding platforms, planking and folding guardrailing.

The building shell was constructed on schedule and the walls shine forth in excellent quality. “We are proud of the result”, says Dario Scimonetti, head of building construction and civil engineering at Hächler AG, about the successful execution of this project.

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Project data

- **Project**
 - New construction of a PET sorting plant, Unterengstringen, Switzerland
- **Contractor**
 - Hächler AG Hoch- und Tiefbau, Wettingen, Switzerland
- **MEVA systems**
 - Mammut XT wall formwork
 - KAB foldable working platform
 - Triplex heavy-duty prop
- **Engineering and support**
 - MEVA Schalungs-Systeme AG Seon, Switzerland



Due to the sum of its advantages, the use of MevaDec quickly pays off. Below, from the left: the managing directors of the construction company Neurbano, Bruno Coutinho and Artur Santos, with Thomas Keck and Paulo Jorge (MEVA). MevaDec predefines the column spacing, meaning that only those props that are actually required are installed.



Over the roofs of Lisbon

How MEVA came to Portugal and Neourbano forms its slabs

While residential construction is stagnating in large parts of Europe, Portugal is currently enjoying a veritable boom – also due to the stimulus triggered by foreign investors . In the capital, Lisbon, the construction company Neourbano Construção is currently building numerous multi-family residential buildings and profiting from the advantages of the flexible and ergonomic MevaDec slab formwork in the process.

Until recently, Portugal, “Europe’s balcony” at the westernmost edge of the continent, was a blank spot on MEVA’s map. “Three years ago I received a phone call from Lisbon”, remembers Paulo Jorge, MEVA’s regional manager in eastern Germany, who was born in Portugal. At the other end of the line was Artur Santos, managing director of the construction company Neourbano Construções. He was familiar with and had a high opinion of MEVA’s formwork, having previously worked on construction sites in Germany, and had found the contact details for Paulo Jorge on the website.

A non-binding telephone call quickly developed into a deeper relationship: Paulo Jorge and Thomas Keck, the head of sales in Germany, invited a small Neourbano delegation to Haiterbach in order to get to know each other personally. The local restaurants were all closed at this time due to the coronavirus lockdown and it was necessary to improvise. The guests were entertained without further ado in MEVA’s Technikum showroom with platters of cold cuts and cheese. “An unforgettable and unconventional meeting”, reports Keck.

MevaDec for high expectations

The decision makers from Neourbano got to know the advantages of MevaDec and bought 2,400 m² of the slab formwork system as well as a corresponding quantity of EuMax props. Artur Santos appreciates the flexibility and efficiency of the slab formwork. He uses it Lisbon and the surrounding area mainly for residential development projects in the upper price segment. For example, the Monview project is currently underway on the hills of the capital city, with houses with eight to ten storeys, stringent architectural concrete requirements and a tight schedule. “The system is quick and easy-to-handle and can be flexibly adapted to suit every building layout and every slab thickness. We do a lot of work with concrete columns with different diameters. Due to the optimum panel size increments, we only have to deal with small filler areas in each case”, reveals Artur Santos.

The investment pays off quickly

The formwork market in Portugal is highly competitive and is mainly dominated by low-cost systems, which, however, offer a low level of quality and flexibility. Despite this, Neourbano has decided to use MevaDec “as a matter of conviction and due to the sum of its advantages, which, in the final analysis, provide a high degree of economic efficiency” (Artur Santos). That starts with the fact that the formwork predefines the prop spacing. This ensures safety, optimised material storage and efficiency on the construction site. Last but not least, Neourbano appreciates the possibility of employing three slab formwork methods – the drop-head-beam-panel, the primary- and-secondary-beam and the panel methods.



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Project data

- **Project**
 - “Monview” residential building, Lisbon, Portugal
- **Contractor**
 - Neourbano Construções, Lda, Milharado, Portugal
- **MEVA systems**
 - MevaDec slab formwork
 - EuMax props
- **Engineering and support**
 - MEVA Schalungs-Systeme GmbH, Berlin office, Germany

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