

FormworkPress

Professional Formwork News

X/2023



Time saving with EcoFix

Formwork for column and wall applications – p. 6, 12, 14

Contents

Editorial	3
News	
Information about MEVA	4
EcoFix achieves time savings	
Ten-storey building in Mumbai grew rapidly and according to plan	6
Faster, safer, more efficient	
Pumping station and reservoir built with MEVA's AluFix	8
AluFix solved the challenge	
Successful implementation of a complex project in Norway's capital.....	10
Efficient building construction	
EcoFix hand-set formwork for fast construction progress.....	12
Project completed on time	
Commercial building erected with EcoFix, MonoDec and MEVA32	14
Masterly football stand renovation	
Special formwork and architectural concrete	16

Imprint

Site photos show situations which do not always depict the final assembly of formwork with regard to safety regulations. Imprint: Edition X/2023. 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.

“FormworkPress in print or digital form? Please give us your feedback and tell us what we can do better.”

Dear Reader,

For many years now we have been regularly informing you about current events involving MEVA in our FormworkPress magazine. Normally you are able to hold the magazine in paper form. That has now changed. As of this issue we are relying exclusively on a digital version – first of all on a trial basis.

The decision to dispense with the traditional printed edition was given careful thought. On the one hand, it was a difficult decision because we were breaking with a long-standing tradition; on the other hand, we felt it is time for a change. By switching to digital, we are reflecting the transition in the media landscape over the past few years and are now putting the focus on sustainability and innovation. By abandoning the print version, we are significantly reducing our ecological footprint, as the production of the paper, the printing and the delivery devour many natural resources. A further factor is topicality. The lead time of several weeks for production, individual packaging and shipping can be better utilised to present more up-to-date news and project reports. In addition, digitalisation enables us to quickly reach people all over the world and to incorporate interactive elements and links.

We are convinced that this is the right way to go, but at the end of the day it is your opinion that counts: print or digital? We would like to know whether and why you consider reading without paper important or, alternatively, why you prefer the haptic of paper and the smell of printing ink.

Please give us your feedback and at the same time, take the opportunity to tell us frankly what we can do to improve the content. Simply send an e-mail to marketing@meva.net or get in touch with your MEVA contact. I promise you that we will review every single response and try to accommodate your needs even better in future. After all, at MEVA an old wise saying applies not only to our formwork systems and services but also to our communications with you: “A better version will always displace a simply good version.”

I wish you a pleasant read.



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

7 questions
3 minutes

www.meva.net/survey

News

Information about MEVA



Gulf: Hanson follows Farina

On 1 July 2023 Joe Farina handed over the management of MEVA Gulf to his successor Chris Hanson (photo left). Joe Farina was the managing director in the Persian Gulf for ten years and was pivotal to the success and expansion of the business in the region. This included the set-up of the new modern headquarters in the National Industries Park in Dubai in 2021 as well as the establishment of new branches in Qatar and Saudi Arabia. Since the construction of the Burj Khalifa, the tallest building in the world, using our MevaDec slab formwork, Joe Farina has built up a committed team. Today, solutions are offered in the entire Gulf region.

Joe Farina and his successor Chris Hanson had already been closely working together since the start of the year and were thus able to ensure a smooth transition. Chris Hanson has a great deal of experience of the industry in the Middle East. He will concentrate on expanding the regional activities with a focus on the Saudi Arabian market where the latest expansion of MEVA Gulf through a branch in Riyadh is already starting to bear fruit.

Focus on sustainability

“We are MEVA” is the title of the first Sustainability Report, which can be read online or downloaded from the company’s homepage www.meva.net. More and more often, customers, partner companies and interest groups require this type of sustainability report because they want to achieve their own ambitious sustainability goals with the help of suitable suppliers.

The MEVA Sustainability Report 2023 describes the measures taken by our group with regard to sustainable economic activities and practices. Its purpose is to enable all interested parties to get a closer insight into MEVA as a company. The document is available in German and English and will be updated and augmented on an annual basis as required.

MEVA is oriented towards the 17 Sustainable Development Goals (SDGs) that were agreed by the United Nations (UN) in the 2030 Agenda for Sustainable Development. Corresponding icons in the report mark our commitment to fair standards and climate protection and against injustice worldwide.



MEVA in São Paulo and Nairobi

In cooperation with our local partner Europa Infrastructure Technologies, MEVA took part in the Buildexpo Kenya at the exhibition grounds in the capital Nairobi for the first time. The economic and user-friendly products MevaFlex, MonoDec and MonoFix, in particular, aroused a great deal of interest. As a result, new contacts in the exciting East African market were established, primarily with principals who are responsible for affordable residential development projects in Kenya and Uganda.

In August MEVA returned to Brazil after a long absence as an exhibitor at Concrete Show 2023 in São Paulo. MEVA took part in this trade fair up to 2002, and even after a 20-year absence was still a well-known brand and supplier of top-quality products and services for a large number of visitors to the trade fair. This was reflected in numerous discussions and extensive positive feedback. The formwork systems MonoFix and EcoFix particularly aroused a great deal of interest. The MEVA team on the spot was thrilled by the atmosphere in the São Paulo Expo Exhibition & Convention Center and the visitors to the exhibition.

Planning, pizza and processes

Every summer, the trainees at MEVA have the chance to attend a three-day seminar on personal development and strengthening team spirit. They are also able to directly influence the content and the meals themselves. Under the guidance of an external seminar leader and after intensive preparations, 13 trainees got together this year at a recreational facility in the Black Forest.

By working together for both theoretical and the practical exercises, team and communication skills were practised and improved. One of the highlights was beer brewing with ingredients the trainees gathered themselves, for example nettles and dandelions. This was a task that required optimum planning, teamwork and good time management.

Additional challenges were mastered relating to this year's main theme of "Strategy". A model of MEVA's corporate structure made the interrelationships between the business processes clear for the career starters. Strategies for the future were developed in the team. And of course, social activities didn't take a back seat, either. The trainees cooked for themselves in a cosy atmosphere, and an evening BBQ gave the trainees the chance to get to know each other better.



EcoFix achieves time savings

Ten-storey building in Mumbai grew rapidly and according to plan

A ten-floor building with 4.5 m storey heights under construction just outside the Indian megacity of Mumbai is destined to serve as the computer centre for NTT Global Data Centers, a telecommunications company. It is precisely for jobs like this that contractor Jett4 Construction purchased the new, cost-effective EcoFix wall formwork system.

Jett4 Construction specialises in growing tall buildings with fast construction progress. EcoFix's versatility allows its use, on this project, for casting columns, lift and stairwell cores as well as shear walls. Its merits quite generally offer major benefits on residential, infrastructure and civil engineering projects. Jett4 Construction had already had previous experience with MEVA solutions in other projects. For the data centre building, a skilled team of engineers around Construction Head Raghavendran Rao relied on the new hand-set EcoFix formwork.

The works on site have made rapid progress and gone according to plan, with the ten storeys already completed. Thanks to the robust formwork – with a permissible fresh concrete pressure absorption of 60kN/m² – and its effortless assembly, the building has rapidly grown skywards. For the 4.5 m

storeys, 3 m were filled in one hour and after a few minutes break another 1.5 m in 20 min. It is also possible to form significantly higher walls, e.g. 9 m, with appropriate bracing. The crane-independent steel system has a wide range of panel sizes, all designed as cost-effective column panels. EcoFix thus solves the problem of dealing with a variety of column and wall dimensions across projects. It is lightweight and easy to handle and offers both birch plywood and alkus all-plastic facing options to deliver a consistently superior concrete finish.

Simply versatile and easy handling

Some 740 m² of panels were delivered to the site by MEVA India. With an average weight of 36 kg/m², the universal formwork guarantees efficient deployment with a minimum of accessories. Its users profit from unbeatable flexibility and cost savings. The universal panels are adjustable with 5 cm increments, can be mixed and matched to construct everything from core walls, shear walls and retaining walls to columns, with a minimal number of components needed, for unmatched flexibility and cost savings. The hand-set formwork allows quick construction where no crane can be used but panels can be connected, locked and transported by crane easily and quickly, as and when required.



Saving time, energy, and money

With closed hollow steel profiles and a powder-coated finish, the durable formwork reduces concrete adhesion and is easy to clean. It is structurally robust, durable, and torsion-proof. The EcoFix internal corner clamp eliminates the need for separate inner corner units, thus cutting the on-site inventory requirement, assembly times and costs. Multi-purpose panels with heights of 300 and 150 cm, and widths of 75, 55, 45 and 25 cm are available for trouble-free corner solutions for any wall thickness. EcoFix has a unique connector that holds the alignment rail in a horizontal position to facilitate the fixing and removing process.

The system is also equipped with multiple options for core wall construction, including end panel connections. T and L junctions can be created with minimum accessories. The MEVA assembly lock provides a structurally continuous connection with only a few hammer blows. EcoFix is equipped for any challenge thanks to its compatibility with AluFox and EcoAs.

i

Project data

- **Project**
 - NTT Data Center, Andheri/ Mumbai, India
- **Principal**
 - NTT Global Data Centers, India
- **Contractor**
 - Jett4 Construction Pvt. Ltd., Andheri/ Mumbai, India
- **MEVA systems**
 - EcoFix wall formwork
- **Engineering and support**
 - MEVA Formwork Systems Pvt. Ltd., Belapur, Navi Mumbai, India



Faster, safer, more efficient

Pumping station and reservoir built with MEVA's AluFix

The Binangonan Pumping Station and Reservoir project in Rizal, Philippines, is on a fast track to completion thanks to the use of MEVA's AluFix system.

The project is managed by the highly reputable end-to-end construction and design services company LinkENERGIE Industries Co. Inc. The scope includes constructing a 667 m² reservoir and water supply facility for Manila Water to be responsible for supplying water to Metro Manila from the regions of Laguna and Rizal. The site spans 30 m in length and 22.2 m in width, with the work having begun in February 2023.

In the past, utilising a different method led to uneven surfaces and numerous finishing corrections. However, with MEVA's AluFix system, the construction process was significantly smoother, requiring minimal adjustments and ensuring uniformity in the finished structures.

Less time required

Time was a critical factor in the project's success, and AluFix proved to be the perfect solution. Its efficient setup allowed for quicker completion, and its adaptability facilitated easy adjustments to unforeseen changes. AluFix eliminated the need for

most additional components like shoring and connections for phenolic and aluminum supports, thus simplifying the construction process. The system's versatility also made it more manageable when working with irregular shapes and thus reducing the reliance on phenolic formwork.

Streamlining the timeline

In terms of time efficiency, AluFix outperformed conventional methods by completing the formwork in less than four days, compared to the projected week with traditional phenolic formwork and shoring. This is also partly due to the possibility of ganglifting and shifting AluFix to the next site, thus eliminating the need for disassembly and reassembly. Disassembling the AluFix formwork is equally seamless, requiring the simple removal of clamps and tie rods. The efficiency of this process minimises downtime and streamlines the construction timeline.

Superior strength provides safety

Safety was paramount throughout the construction process and AluFix's stability under pressure from strong water flow and vibrations was commendable. The formwork remained firm and reliable, even during intense work conditions. Compared to traditional methods, AluFix offers superior strength



MEVA Site Operations Team awarding certificates to LinkENERGIE's team

and ensures a smooth pouring process without the risk of formwork failure.

Successful execution

The success of the Binangonan Pumping Station and Reservoir project is a testament to the effectiveness of MEVA's AluFix system. MEVA Philippines is proud to have collaborated with LinkENERGIE as companies committed to excellence. The project's successful execution has elevated the construction standards and set a benchmark for future endeavours in the region.

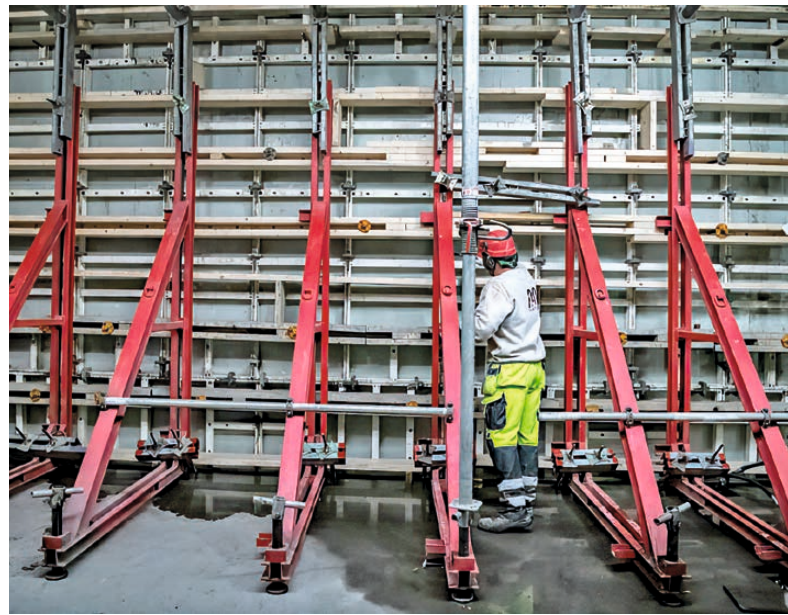


Successful collaboration: LinkENERGIE and MEVA

i

Project data

- **Project**
 - Binangonan Pumping Station and Reservoir, Rizal, Philippines
- **Principal**
 - Manila Water Company, Inc.
- **Contractor**
 - LinkENERGIE Industries Company Incorporated
- **MEVA systems**
 - AluFix wall formwork system
- **Engineering and Support**
 - MEVA Philippines, Inc.



AluFix solved the challenge

Successful implementation of a complex project in Norway's capital city

In Torggata, in the middle of Oslo's nightlife district, MA Entreprenør renovated a historic five-storey residential building. One challenge was the necessary raising of the ceiling in the basement from 1.8 to 3.7 m. When building in existing structures, the lightweight multi-purpose formwork AluFix came into its own.

MA Totalbygg is the turnkey renovation contractor. The company specialises in the repair and conversion of listed residential buildings and in improving the floor conditions in existing residential buildings. In the case of Torggata 18, the project involved the total renovation and extension of an apartment building that now develops three floors of commercial space and two floors of living space, as well as technical rooms in the attic.

Challenging task

Kristian Lading, site manager at MA Entreprenør, describes several challenges in this project: "The renovation of an existing building is a completely different process than a new building. The conversion of the basement is usually particularly demanding. In this case, we had to dig downwards to significantly increase the ceiling height. We built a ramp downwards and used several small excavators to dig the basement deeper. It was a laborious process, but it went well," says Lading.

The basement and the first and second floors were completely demolished and rebuilt, while the third and fourth floors remained standing. As part of this work, steel core piles were drilled to a depth of 18 m to ensure the stability of the building. Due to the high groundwater level, the basements were concreted in new waterproof construction. The use of a crane was, as is so often the case when building in existing structures, only possible to a limited extent. This became noticeable when forming the basement walls: "We could only walk on one side during the formwork process. We could not have lifted heavy formwork elements here. So we tried a completely new solution – and it worked very well for our application," reports Kristian Lading.

This new solution was AluFix. MEVA partner MAXBO Teknikk supplied the lightweight manual formwork that can be transported without crane assistance. According to MAXBO Teknikk, the elements are assembled almost like Lego building blocks. Their heights range from 135 to 350 cm and six widths from 25 to 90 cm. In order to be able to safely absorb the concrete pressure via the one-sided formwork in the Torggata project, MEVA STB 300 support frames were installed.

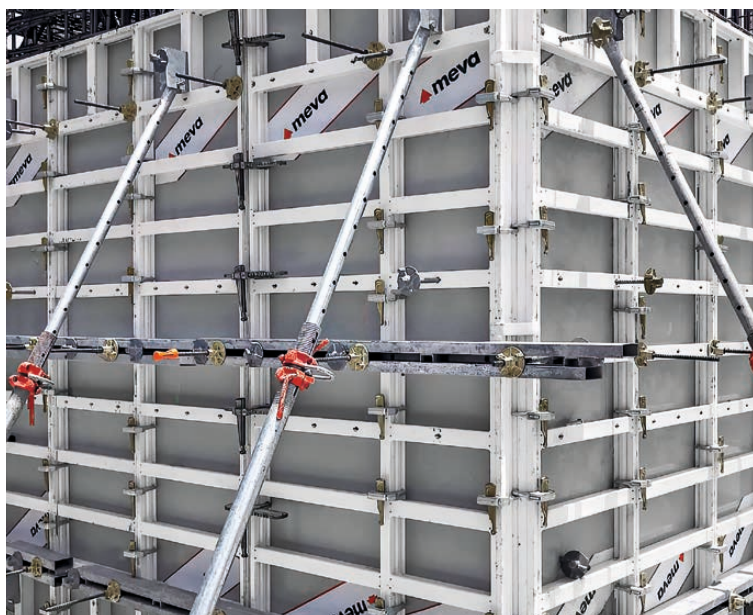


Photo on the left: Site manager Kristian Lading and project leader Bjørn Christensen had to find new solutions in their work on Torggate 18 in Oslo.

Strong growth

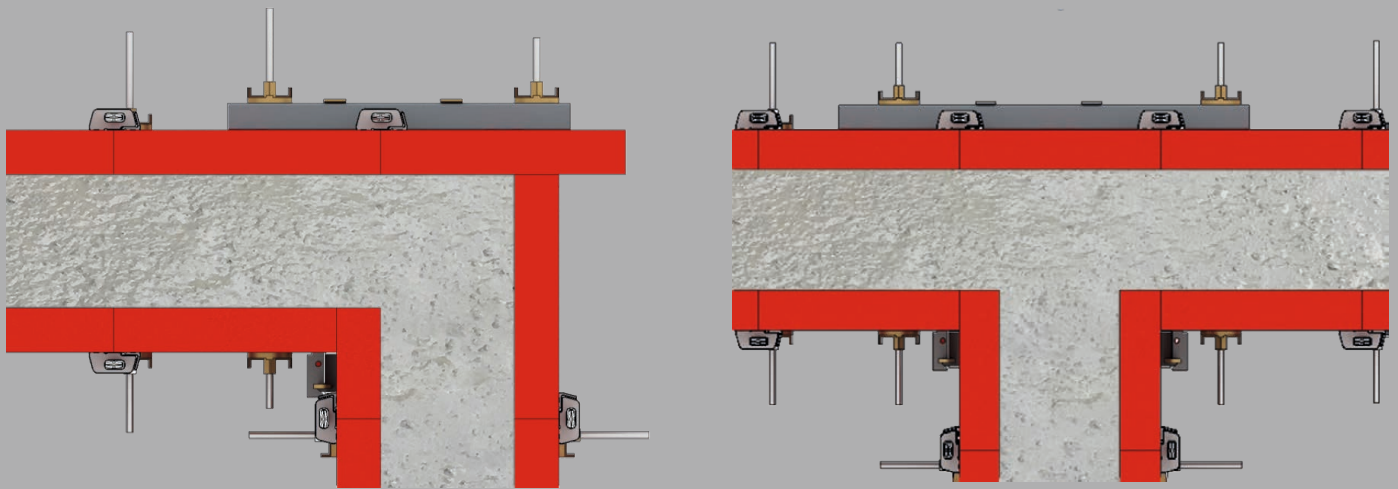
Within a few years, AluFix has developed from an initial niche product to a multi-purpose formwork for everyone. More and more construction companies appreciate the flexibility of the system when building walls, foundations and even slabs. "In the beginning we owned between 50 and 100 AluFix elements, today we have about 1,000," says Pål Kjustad, regional manager of MAXBO Teknikk. The formwork experts rent and sell formwork and accessories. AluFix elements convince with a full-surface fresh concrete pressure absorption of 50 kN/m². The lightweight aluminium frame profiles are fitted as standard with alkus all-plastic panels, which are easy to clean and repair, can be used over 1,500 times and thus make numerous timber panel changes superfluous.

Site manager Kristian Lading (MA Entreprenør) and project manager Bjørn Christensen (MA Totalbygg) discovered new solutions during their work on Torggate 18 in Oslo, and the use of AluFix was a successful premiere. "We will definitely choose the system for future projects. It is very suitable for our purposes as we normally do not use a crane. AluFix is easy to assemble and saves us both time and money," says Kristian Lading.

i

Project data

- **Project**
 - Torggata 18 renovation, Oslo, Norway
- **Contractor**
 - MA Entreprenør as part of MA Totalbygg, Oslo
- **MEVA systems**
 - AluFix hand-set formwork
 - STB 300 support frame
- **Engineering and support**
 - MAXBO Teknikk, Sandvika, Norway



With EcoFix, various L and T panel junctions are possible with minimal accessories.

Efficient building construction

EcoFix hand-set formwork for fast construction progress

The new MEVA EcoFix formwork system has quickly established itself in many regions worldwide (see pages 6 and 14). One of the secrets of its success is its flexibility, which makes efficient construction progress possible. EcoFix solves the problem of dealing with a variety of column and wall dimensions across projects because of its multi-purpose panels. It is lightweight and easy to construct and offers both birch plywood and alkus all-plastic facing options to deliver a consistently superior concrete finish. The system is ideal for residential schemes, commercial projects as well as infrastructure and civil engineering projects.

Truly modular formwork system

Multi-purpose elements make it an ideal solution for all column and wall applications in a wide range of structures without the need for a crane. Universal panels, adjustable with 5 cm increments, can be mixed and matched to construct everything from core walls, shear walls and retaining walls to columns, with a minimal number of parts for unmatched flexibility and cost savings. The hand-

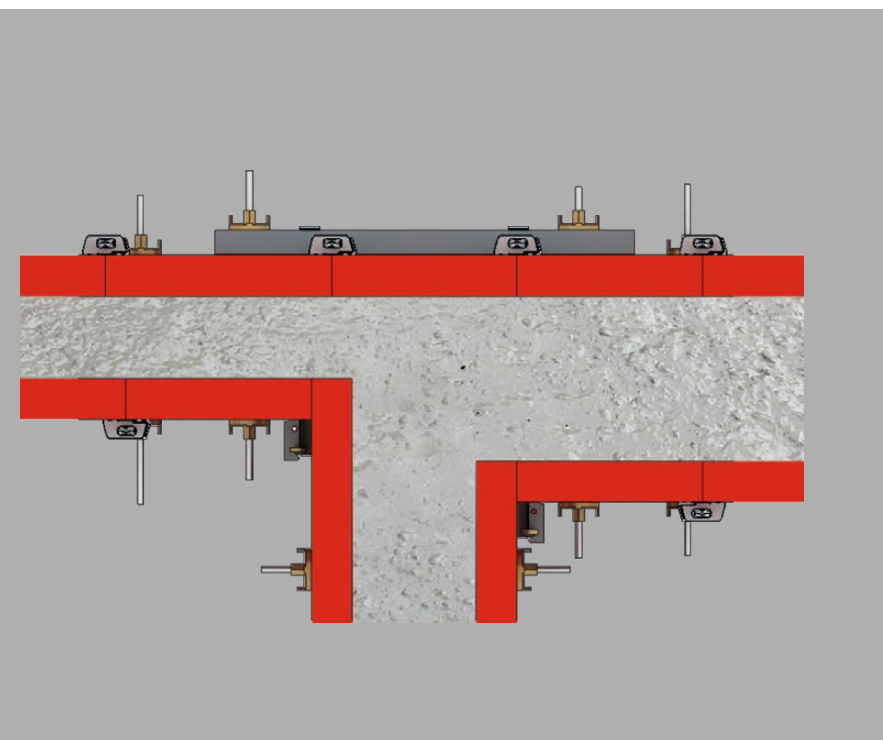
set formwork allows quick construction where no crane can be used but panels can be connected, locked and transported by crane easily and quickly, as and when required.

Innovation as standard

MEVA's newly developed internal corner clamp eliminates the need for separate internal corner panels, which means fewer panels on site, less assembly time and reduced costs. With a permissible fresh concrete pressure absorption of 60 kN/m², a choice of plywood or alkus facing, and compatibility with AluFix and EcoAs, EcoFix is equipped for any challenge.

Always properly aligned

The system offers panel heights of 300 cm and 150 cm and panel widths of 75 cm, 55cm, 45 cm and 25 cm for trouble-free corner solutions for any wall thickness. Adjustable dimensions in 5 cm increments provide flexibility between column and wall usage. EcoFix is fully compatible with AluFix and EcoAs and ensures seamless combination with



The internal corner clamp eliminates the need for separate internal corner panels.

existing MEVA inventory. The 220 g/m² phenolic coated birch plywood facing ensures a superior quality concrete finish and minimal replacement costs. With alkus, the replacement costs are zero.

Closed hollow aluminium profile

EcoFix is structurally robust, durable, torsion-proof and therefore durable and particularly economical. The powder coated surface of the closed hollow aluminium profile reduces concrete adhesion and facilitates cleaning with fewer resources. The internal corner clamps eliminate the need for separate internal corner panels. With only a few hammer blows the MEVA assembly lock ensures structurally continuous connections.

EcoFix has a unique connector that holds the alignment rail in a horizontal position to facilitate the fixing and removal process. This system is also equipped with multiple options for core wall construction, including end panel connections – depending on your needs.

i

Cost-effective hand-set formwork

- **For all column and wall applications in a wide range of structures**
- **Crane-independent**
- **Flexible size adjustment in 5 cm increments**
- **Closed hollow steel frame profile**
- **Use of internal corner clamps and tension screws eliminates need for corners**
- **Compatible with AluFix**



Quick and easy to assemble, MEVA 32 requires few legs.

Project completed on time

Commercial building erected with the help of EcoFix, MonoDec and MEVA32

As a globally successful provider of economical, safe and efficient solutions for the construction industry, MEVA is also increasingly active in Caribbean countries.

Local partners and formwork experts advise and supply construction companies throughout the region from the Dominican Republic to Jamaica and from Barbados to Santa Lucia. The expertise and broad product portfolio are proving their worth in numerous projects, such as the construction of a modern commercial and office building.

The responsible building contractor, a specialist in the cost-effective construction of such projects, relied on MEVA know-how. The building has two basements and five typical floors, each 3.25 m to 5.90 m high. The project manager was delighted with the quality of the equipment and the easy assembly of the formwork systems EcoFix and MonoDec and of the shoring system MEVA32.

EcoFix for columns and walls

The contractor used around 315 m² of the crane-independent EcoFix wall formwork system to build the 60 x 60 and up to 60 x 80 cm thick columns and 20 to 25 cm thick walls. The lightweight and robust multi-purpose elements are ideally suited for a wide range of fast operations. Internal corner clamps make separate internal corner elements superfluous and therefore enable fast construction progress, also thanks to a fast learning curve.

MonoDec for slabs

For the slab formwork, the experienced team used the exceptionally flexible MonoDec system. It is also lightweight, made of aluminum for quick and easy assembly by hand and provides a high-quality concrete finish for beams and slabs. With just three basic components – panels, beams and props – MonoDec can be easily adapted to any geometry.

In this project the innovative drop head for early stripping and accordingly shorter cycles paid off. The primary beams and panels were lowered by using a hammer, then stripped, and used for the next



MonoDec slab formwork provides a high-quality concrete finish and consists of only three components.

cycle while the slab that had just been formed was supported by the props and continued to harden. The outcome? Rapid construction progress, only a small amount of material stored on-site, simple logistics.

MEVA32 as a secure support

The slab formwork was supported by MEVA32, which is designed for high loads and to suit different applications. This versatile yet simple system only requires a few basic components. The lightweight aluminum frame has a total load capacity of 142 kN. The high load means fewer frames are required. Frames are connected together horizontally using cross braces, as well as on their side and lifted into place by crane.

The lightweight, easy-to-assemble MEVA systems simplify work and help to reliably complete projects like this one – successfully and within the specified time frame.

i

Project data

- **Project**
 - Commercial and office building, Caribbean location
- **MEVA systems**
 - EcoFix wall formwork
 - MonoDec slab formwork
 - MEVA32 shoring system
- **Engineering and Support**
 - MEVA Schalungs-Systeme GmbH, LATAM



Masterly stand renovation

Special formwork and architectural concrete: renovation under complex conditions

The football fans who support VfB Stuttgart are happy: Their club managed to avoid relegation from the Bundesliga, Germany's top league, at the end of the last season and returned recently to a freshly modernised home base. The sixth-largest stadium in Germany shines in new splendour after the complex renovation of the grandstand. MEVA delivered special solutions, formwork, shoring tower systems and the formwork planning.

Flashback to the summer of 2022: After the demolition of the last existing part of the stand, a race against time began for ARGE 1893 Ed. Züblin AG / ROM Technik GmbH & Co. KG. The new stand with the tiered seating for the spectators was already available in August 2023, in time for the start of the new season. All remaining work will be completed by January 2024. Players, officials and more than 60,000 spectators will then be welcomed to a top-class arena. And when all eyes in the football world turn to Stuttgart for five games during the UEFA EURO 2024, there will nothing to remind them that the heart of the stadium's infrastructure had been operated on under high pressure within the existing structure while the team was playing regular league games.

From the outside only the tiered seating for the spectators can be seen. However, in the interior of the main stand a lot more is being created: a players' section with changing rooms, function rooms for officials, press room and media centre, TV studios, a restaurant kitchen, maintenance areas, sanitary rooms and lifts. The routes for the spectators from the entrance gates to the stand and back again are being optimised in accordance with high safety standards. In an exclusive business area the spectators are almost within touching distance of the stars as they make their way between the changing room and the pitch.

Time pressure and shortage of space

The very tight time schedule, in particular, is a challenge. Every week counts, as the loss of thousands of seats in

the tiers for the spectators and in the business areas costs valuable income. However, there was already an unpleasant surprise during the demolition of the old stand: The existing foundations were not, as expected, in good condition. Structural engineers and experts had the final say, new authorisations had to be obtained and finally in January 2023 400 m³ of concrete were poured. The experienced construction team made up for the resulting delay by speeding up the construction work.

As there was hardly any space between the pitch and the stands, meticulous construction site logistics were indispensable. The complexity of the many different building structures required comprehensive preparation: MEVA created more than 100 formwork plans and a multitude of assembly plans for special formwork. The work required before each game was also considerable: The construction site had to be cleared, secured and hidden behind panels. It was not possible to use tower cranes in the interior, making it necessary to use a great many mobile lifting devices. A large part of the on-going forming work is currently being performed in the existing structure, often in areas under existing slabs that are difficult to access. The interior walls of the stand were poured in a very confined space and, due to the tight time schedule, at the same time as the spectator terraces. The lightweight and stable hand-set formwork AluStar played to its strengths here: low weight, robustness and simple handling.

... continued on page 18





... continued from page 17

When it was possible to receive assistance from a crane located in the outdoor area of the stadium, the work was performed using the high-performance wall formwork systems Mammut 350 and Mammut XT. For the construction of the entranceways and outdoor staircases, Mammut 350 proved to be the ideal choice: A high architectural concrete quality was achieved thanks to the harmonious, symmetrical joint and tie hole pattern and the alkus all-plastic facing fitted as standard. The 9 m high guide walls were poured using Mammut XT: Despite the wall thickness of 72 cm, the single-sided tying with tying positions symmetrically offset away from the edges of the panels posed no problems.

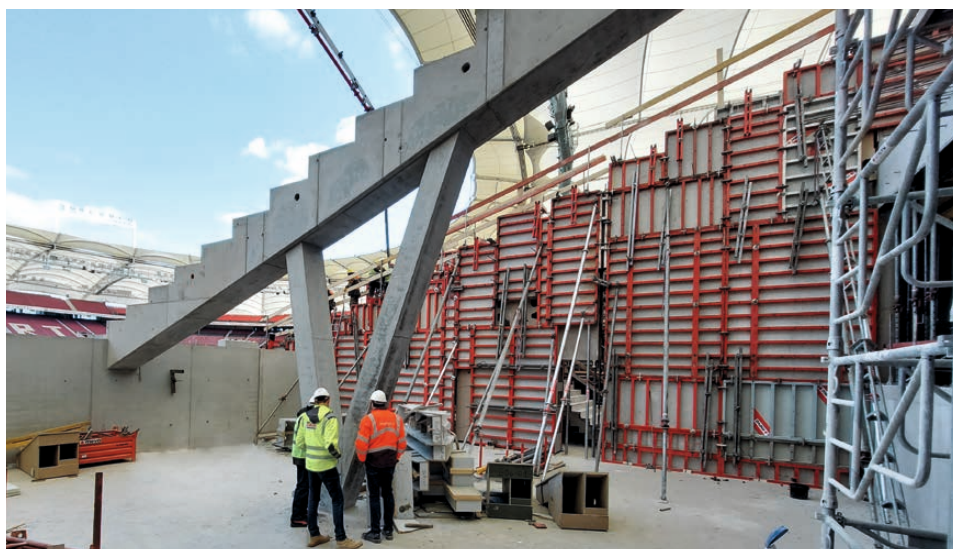
Cleverly combined shoring towers

Thanks to their flexibility, the MEP and MT 60 shoring towers made the work easier, for example when supporting overhangs and slabs that were to remain in place or be demolished in order to make room for stairwells and lift shafts. Corresponding constructions were erected using the MT 60 shoring tower, Triplex SB heavy-duty props and EuMax props. The MT 60 shoring tower was also used for the construction of 40 cm thick slabs with concrete beams and scaffold heights from 5 to 8 m, often combined with the MEP shoring tower. Slabs with scaffold heights up to 5 m were poured using MevaFlex.

Toothed beams and V-shape supports

In early 2023 twenty-four imposing toothed beams, each with different designs, were poured on-site. They act as crossbeams to support the floors of the stand that are made up of precast concrete elements. The original plan was to prefabricate the toothed beams and have them delivered to the stadium, but this was rejected for weight and transport reasons. The formwork had to be produced in special shapes that could not





The MT 60 shoring tower supported overhangs and slabs (bottom left); the construction of the toothed beams and V-shape supports (photo series at the top) was done with the aid of 3D models, hundreds of special wooden panels, partially doubled-up Mammut 350 wall formwork, and MEP shoring tower elements.

be achieved using standard formwork systems. MEVA's department for special formwork planned the creation of the teeth using hundreds of special wooden panels with dozens of different dimensions. First of all 3D models were created, which enabled quick decisions to be made.

Each toothed beam has steps with varying depths and heights. The spacing and heights differences between the seat rows vary, as the inclination of the stand increases from about 30° in the lower section to about 40° in the upper section. For this reason, the lower edges of the toothed beams also have changing gradients. Two toothed beams are connected directly to the balustrades of the new players' tunnel. After installation of the initial formwork (Mammut 350) and lower boxes, the MEP shoring tower system was installed to provide support in the ascending area. The rebars were then installed, upper boxes fixed to special brackets, the final formwork set up and the concrete poured in through openings on the top side.

Four V-shaped, 50 cm wide supports were also poured without problem. These support the 70 cm wide toothed beams. To compensate for the 20 cm difference in width, the Mammut 350 panels for the initial and final formwork were each doubled up by 10 cm. Initial formwork installed, insert boxes fixed in place, rebars and final formwork installed, concrete poured. The final formwork was now removed in the upper area, rebars and special wooden panels for pouring of the toothed beams were installed, the final formwork was anchored, and the concrete poured. The V-shape supports and toothed beams shine in architectural concrete quality that exceeds the SB2 quality required by the principal and blend into the flawless overall appearance of the old, new stadium.

i

Project data

- **Project**
 - Modernisation of a football stadium, Stuttgart, Germany
- **Principal**
 - Stadion NeckarPark GmbH & Co. KG, Stuttgart
- **Architect**
 - asp Architekten GmbH, Stuttgart
- **Contractor**
 - Arge 1893, Ed. Züblin AG / ROM Technik GmbH & Co. KG, Stuttgart
- **MEVA systems**
 - Special designs
 - Mammut 350 and Mammut XT wall formwork
 - AluStar wall formwork
 - MT 60 shoring tower system
 - MEP shoring tower system
 - Triplex heavy-duty props
 - EuMax props
- **Engineering and support**
 - MEVA Schalungs-Systeme GmbH, Haiterbach, Germany

You can rely on us wherever you are.

With 40 offices on 5 continents, we are
on the spot wherever you need us.

Headquarters (Germany)

MEVA Schalungs-Systeme GmbH
Industriestrasse 5
72221 Haiterbach
Tel. +49 7456 692-01
Fax +49 7456 692-66

info@meva.net
www.meva.net

Subsidiaries/international bases

AE-Dubai	Tel. +971 4 8042200	LU-Rodange	Tel. +352 20 283747
AT-Pfaffstatten	Tel. +43 2252 20900-0	MA-Casablanca	Tel. +212 684-602243
AU-Adelaide	Tel. +61 8 82634377	MY-Perak	Tel. +60 12 5209337
BE-Landen	Tel. +32 11 717040	NL-Gouda	Tel. +31 182 570770
BH-Riffa	Tel. +973 3322 4290	NO-Oslo	Tel. +47 67 154200
CA-Toronto	Tel. +1 416 8565560	NORDIC	Tel. +45 2043 1855
CH-Seon	Tel. +41 62 7697100	PA-Panama City	Tel. +507 2372222
FR-Sarreguemes	Tel. +33 387 959938	PH-Manila	Tel. +63 998 5416975
GB-Tamworth	Tel. +44 1827 60217	QA-Doha	Tel. +974 4436 6742
HU-Budapest	Tel. +36 1 2722222	SG-Singapore	Tel. +65 6992 8000
IN-Mumbai	Tel. +91 22 27563430	US-Springfield	Tel. +1 937 3280022
LATAM	latam@meva.net		



MEVA Schalungs-Systeme GmbH

Industriestrasse 5 Tel. +49 7456 692-01
72221 Haiterbach Fax +49 7456 692-66
Germany info@meva.net

www.meva.net