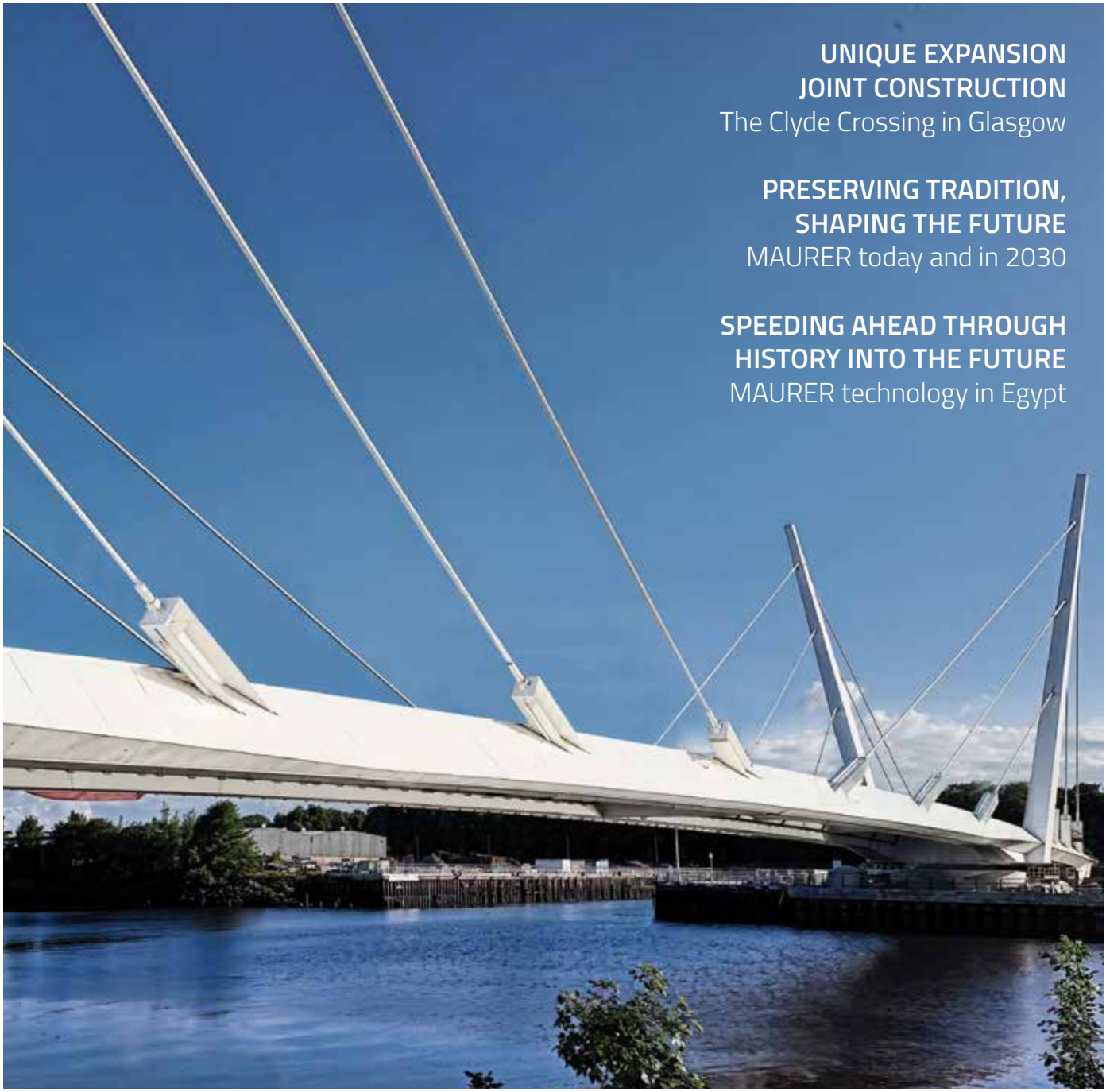
MAURER

MAURER || MAG



UNIQUE EXPANSION JOINT CONSTRUCTION
The Clyde Crossing in Glasgow

PRESERVING TRADITION, SHAPING THE FUTURE
MAURER today and in 2030

SPEEDING AHEAD THROUGH HISTORY INTO THE FUTURE
MAURER technology in Egypt

forces in motion

10|2024
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Sanierung der Alsterschwimmhalle in Hamburg

LEBENSZYKLUS
Ökologische Optimierung von Tragwerken im Infrastrukturbau

BRÜCKENMONITORING
Zustandsüberwachung und -analyse

Dear readers,

We are pleased to present you with the seventh issue of our MAURER magazine.

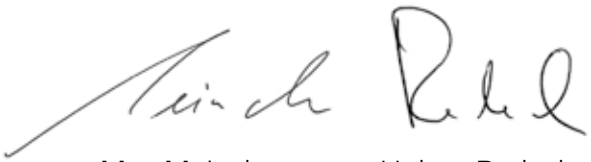
At a time when the world economy is being buffeted by global challenges like trade conflicts and geopolitical tensions, MAURER remains a reliable partner in building and infrastructure protection. Our projects in Europe, the Middle East and other regions are testament to our ability to deliver innovative solutions even in turbulent times.

In this issue, we present some of our most recent reference projects, and provide an insight into our international branches and collaborations. We are particularly pleased to introduce you to our dedicated employees and their departments, whose expertise and passion are key to MAURER's success.

Despite the current global uncertainties, we are optimistic about the future. By joining forces and maintaining a clear focus on quality and innovation, we will work with valued partners and customers like you to master the challenges ahead and seize new opportunities.

We hope you enjoy reading, and look forward to continuing our successful collaboration.

With best regards from Munich,



Max Meincke Holger Redecker

MAURER || TOPICS

//IMPRINT

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Frankfurter Ring 193
80807 Munich
Germany
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PROTECTION WITH SEISMIC ISOLATORS // A WOODEN WAVE-SHAPED AIRPORT ROOF

New main terminal at Portland International Airport is equipped with seismic isolation bearings.

Portland. The new wooden roof that floats above the reconstructed and expanded terminal at Portland airport is a stunning feat of architecture. Supported by Y-shaped columns, the visionary design is protected against earthquakes via 68 double concave SIP® bearings sitting on top of the Y column tines. These posed a challenge to MAURER's seismic protection experts.

The main terminal of Portland International Airport (PDX) in Oregon, USA, was expanded, renovated and equipped with seismic protection in a project lasting several years. Measuring approximately 32,500 m², the new timber roof is an eye catcher. The design of ZGF Architects and KPFF Consulting Engineers resembles the waves of the sea and rests on 34 steel Y-columns.

Treating the roof as a bridge

Beyond the appearance, the seismic isolation of the wooden beauty posed a challenge. The seismic design aimed to cover all possible load cases during normal operation and in the event of earthquakes.

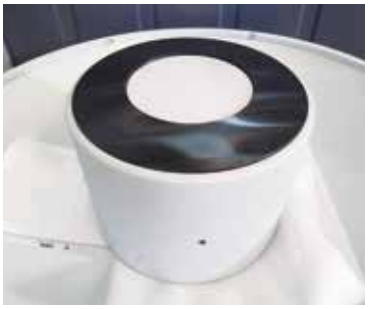
Per code requirements, the structure was analysed for the MCER (risk-targeted maximum considered earthquake) case. In the end, this resulted in large roof displacements of ± 406 to ± 572 mm.

SIP®-D: Double Sliding Isolation Pendulums

SIP® stands for Sliding Isolation Pendulum. They have four functions:

- They isolate and separate the terminal roof from the columns and allow horizontal movement in all directions.
- They limit the seismic movements through internal friction by converting kinetic energy into heat.
- They recentre the roof back to its original position following an earthquake due to their concave sliding surfaces.
- They transmit vertical loads of up to 4,115 kN.

"D" (for double) indicates that the bearings have two concave surfaces instead of one, between which a puck slides. In the case of SIP®-D bearings, the displacement is evenly distributed over two concave surfaces, which reduces the required diameter by approximately one third. This means that SIP®-D bearings can be built smaller, which complied with the architects' specifications.



Hidden inside: a puck, the centrepiece of a SIP® bearing. The photo was taken during the overhaul of a prototype bearing following testing. Photo: MAURER

Several test series in special testing laboratories

Prototypes of all four bearing types were manufactured in their full-scale size, before being dynamically and statically tested at the EUCENTRE in Pavia.

To simulate real earthquake conditions, the bearings were tested at velocities up to 1 m/s and up to ± 380 mm displacement, with a maximum 420 tonnes of superimposed load. Half of the prototypes were then tested again at SISMALAB in Crispiano to ensure that the subsequent production tests also provided valid results. These tests simulated more than three maximum earthquakes. "Even under these tough conditions, the bearings showed no signs of wear or damage", reports Mark Kaczinski, Vice President MAURER North America.

Phase one of the new PDX airport terminal opened in August 2024, with full completion due by late 2025.

Detachable expansion joint.

DETACHABLE ANCHORAGE // FOR EXPANSION JOINTS

The Duisburg-Neuenkamp Rhine Bridge is being transversely displaced together with its expansion joints.

Duisburg. The first section of the new Duisburg-Neuenkamp Rhine Bridge is already open to traffic, but it will not stay where it currently is. A spectacular transverse displacement is planned for 2026, which will also include the expansion joints. MAURER therefore designed special detachable anchorages.

As part of the A40 motorway, the Rhine bridge in the Neuenkamp district of Duisburg connects the Ruhr region with the Netherlands. In the 1990s, it was expanded from four to six lanes due to heavy traffic, but this had such a severe impact on the bridge that fatigue of the steel superstructure posed a threat to the structural stability. In the late 2010s, the bridge was closed to trucks and new construction became inevitable.

First section of the bridge already inaugurated

A ten-lane cable-stayed bridge is being built with two separate superstructures and dedicated foot and cycle paths alongside them. With a total length of 803 m, the bridge features a main span of 428 m over the Rhine. The eight pylons located in the flood plains of the Rhine are 68 m tall and each support ten double-stay cables.

As the bridge is ultimately intended to realign with the axis of the existing A40, the southern superstructure was initially built in a lateral position and inaugurated at the end of 2023. It now supports the entire traffic load including trucks on six lanes.

A large expansion joint is lifted into position in August 2023.

Detachable expansion joints

This transverse displacement poses a particular challenge. As the southern superstructure is already open to the traffic, it has fully functional expansion joints. Expansion joints are installed at the ends of the bridge to compensate for longitudinal movements of the bridge deck as well as dynamic structure movements.

MAURER has designed special expansion joints for the southern superstructure so that they can be moved with the transverse displacement in 2026. The anchorage of the expansion joints was equipped with a special steel construction which can be detached prior to the transverse displacement. In addition, the expansion joint was embedded using lean concrete, which will be removed prior to the transverse displacement. In its final position, the expansion joint is then installed with the usual rapid-hardening concrete.

There has never been a transverse displacement of expansion joints of this size before. Here, the challenge did not lie in the expansion of up to 900 mm. MAURER has already built and displaced expansion joints before, which allowed for much larger movements. Instead, it was the special geometry of the expansion joints that proved to be tricky, due to their varying transverse slope and an enormous length of up to 48 m.

MAURER is supplying a total of eight expansion joints for the new Rhine bridges: XLS 900 and XLS 400 for the main lanes, as well as XLS 900 and DB 130 for the dedicated foot and cycle paths alongside them.

A video by DEGES illustrates the procedure of the transverse displacement on www.youtube.com/watch?v=fXCaKP-jaxG0 (from 4:48 min.)

REPLACING ROLLER BEARINGS // **WITH SPHERICAL BEARINGS**

Kocher Viaduct fitted with modern sliding bearings instead of rollers

Neuenstadt am Kocher. As part of the renovation of the A81 motorway at the Kocher Viaduct, MAURER is replacing the old stainless steal roller bearings with modern spherical segment bearings. This patented bearing type was developed precisely for this application and is approved by a European Technical Assessment.

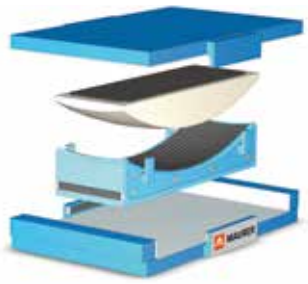
The Kocher Viaduct is a nine-span box girder bridge made from prestressed concrete, with a total length of 478 m. It is undergoing renovation to prepare it for future requirements, with reinforcement measures including external prestressing and new expansion joints. Another very important measure is the replacement of the existing bearings with modern sliding bearings.

Same dimensions, more capability

What makes the spherical segment bearings special is their geometric design that runs transverse to the bridge. This allows loads to be transferred from the superstructure to the piers in precisely the same way as with the roller bearings, therefore removing the need for structural strengthening or reconstruction.

What are the functions of a spherical segment bearing?

A spherical segment bearing is a modern sliding bearing that simulates a roller bearing – a "hybrid" of spherical and cylindrical bearing. When renovating roller bearings, it is crucial that the friction and structural interfaces remain unchanged. Additionally, the segment bearing can rotate about all axes like a spherical bearing, thus preventing the sliding material from being overloaded.



Exploded view of the principle of a spherical segment bearing: the elongated design is excellently suited to replacing roller bearings. The curved sliding surface also allows for rotations. Image: MAURER

Roller bearings have a rectangular shape. They become very wide in the transverse direction of the bridge when subjected to high loads, as is the case with the Kocher Viaduct. Longitudinally, the roller does not require much space. In terms of forces and movements, an MSM® spherical bearing can easily replace a roller bearing, but its round or square shape poses a problem. MAURER developed the spherical segment bearings ten years ago to ensure that the transfer of forces via the concrete structural interfaces is as identical as possible after the renovation. Segment bearings resemble spherical bearings hat have been "cut off" on the right and left sides. As one would expect, the new innovation posed a number of technical challenges.

How could the curvature of the calotte be designed to make it flat enough to distribute the pressure evenly, while remaining sufficiently curved to prevent the calotte segment from slipping out to the side? How could the calotte segment be prevented from turning out? In addition, the production and edging of the MSM® sliding material had to be rethought, as the rectangular bearing shape further complicated the geometry of the calotte segment, as it was curved in all directions.

Conclusion: This modern special bearing represents an ideal replacement for roller bearings, while minimising interventions into the structure.

Autobahn GmbH is the developer for the renovation of the A81 motorway. The general contractor is Bögl.

The bearings were replaced in autumn 2023 and summer 2024.

One of the 24 newly installed spherical segment bearings.

25 YEARS OF THE BRIDGE BUILDING SYMPOSIUM // A CAUSE FOR CELEBRATION

MAURER SE marks the anniversary in Leipzig with a sparkling wine that is as elegant, effervescent and well-matured as the symposium itself.

25 and 26 February 2025, Leipzig

Leipzig. The conference in Leipzig has been bringing together leading bridge builders for 25 years. Launched by the publishing house Wiederspahn, it is now one of the most important industry events in the German-speaking world. Every year, renowned companies report on the latest developments and technologies. Around 300 decision-makers from public contractors and bridge building companies took the opportunity to share ideas.

MAURER has accompanied the event from the very beginning and promotes the exchange of expertise. This year, a tribute was also paid to the late Elisabeth Wiederspahn, who shaped the symposium with her dedication.

EXCITING INSIGHTS INTO // MAURER'S WORLD OF STRUCTURAL PROTECTION

Students of the Institute of Fluid Systems Engineering visit MAURER SE.

Munich. A group of 16 students from the Institute of Fluid Systems at the Technical University of Darmstadt, accompanied by Prof. Peter Pelz and Prof. John Linkhorst, visited MAURER SE in Munich. The students gained exciting insights into the production of structural protection systems and experienced the highly complex bearings they learned about in their technical mechanics lecture up close.

October 2024: 16 students from the Institute of Fluid Systems Engineering, accompanied by Prof. Peter Pelz and Prof. John Linkhorst.

They were particularly impressed by the precision and size of the components, which are used all over the world. The visit left a lasting impression and demonstrated the close link between theory and practice. We are already looking forward to future visits.

The first new Rhine bridge in Leverkusen.

SPECIAL BEARINGS AND NOISE REDUCTION // FOR LEVERKUSEN RHINE BRIDGE

Special restraints for the bearings and noise reduction on the expansion joints – MAURER supplied high-quality special elements for the first new section of the bridge over the Rhine in Leverkusen.

Leverkusen. The previous Leverkusen Rhine bridge on the A1 motorway had been in operation since 1965, and due to cracks in the steel load-bearing structure, could only be used by vehicles of up to 3.5 tonnes at a maximum of 60 km/h since 2014. This caused major traffic problems in the region, as goods vehicles had to use other bridges.

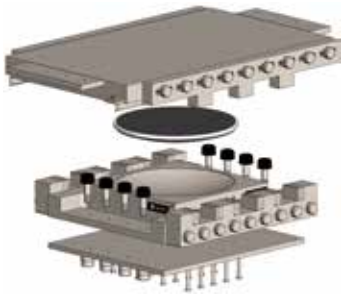
Installed expansion joint on the new bridge, which will have six lanes until the completion of the second section. Photo: MAURER

Since February 2024, the problem has been partially alleviated. The first cable-stayed bridge of the replacement construction, with two carriageways, was inaugurated and now carries the entire traffic volume of 150,000 vehicles per day. The bridge has a total length of 1,068.5 m (main bridge 690 m) and has two distinctive A-shaped pylons.

The width of over 33 m is currently used for three narrowed lanes in each direction towards Koblenz and Dortmund. The design allows for expansion to four lanes, two access and exit ramps, plus hard shoulder and a cycle path. Construction of the second parallel section of the bridge began in 2025, with inauguration scheduled for 2027.

Bridge bearing system with special functions

Both of the new, separated bridge structures consist of a main span and an approach bridge on the left bank of the Rhine. The main span with a steel superstructure, as well as the approach bridge in a concrete box girder variant, are supported by modern bridge bearings with special functions.



Exploded view of the special bridge bearing with temporary restraints.

MAURER is supplying 44 MSM® spherical bearings for each of the two bridges. Spherical bearings are sliding bearings that can accommodate any rotations in all directions without noticeable resistance and transfer them to the substructure. The main span

is a cable-stayed bridge that transfers an enormous superimposed load of approximately 100,000 kN to the MSM® spherical bearings below the pylon. The patented MSM® (MAURER Sliding Material) proves its worth here. In contrast to alternatives such as PTFE, it is free of PFAS. Additionally, MSM® has a much longer service life (more than 50 years) and twice the compressive strength. The bearings can therefore be built smaller.

The bearings are installed on the first new bridge section in Leverkusen.

A special construction method enables part of the bridge bearings to be temporarily restrained and gradually released and loosened. This increases work safety during the construction process and protects the adjacent components against uncontrolled impact load.

MAURER Project Manager, Dirk Wilming, explains: "Such smart bearing systems are exemplary and make life easier on site."

Low-noise expansion joints

The three expansion joints also supplied by MAURER are exceptional due to their length alone. The largest, an XLS 800, is 36.3 m long and has seven profiles along with two edge profiles.

All three expansion joints are noise reduced. Specially profiled rhomboid plates welded on top reduce the noise level by 30 to 50 per cent.

An installed bearing. During the construction phase in the launching process, temporary restraints had enabled the bearings to partially assume various functions as construction work progressed.

HONOURED BY THE // VDEI SYMPOSIUM

MAURER honoured as a long-standing exhibitor at the VDEI symposium

Berlin. On 26 September 2024, MAURER was honoured for its many years of participation as an exhibitor at the Conference on Structural Engineering in Berlin. A special honour went to our colleague Michael Ohnheiser, who has attended every conference since the founding year in 2010 and has been a committed supporter of the event from the very beginning.

The symposium is organised by the VDEI Academy for Railway Engineers, an educational institution of the Association of German Railway Engineers (VDEI). The academy supports specialists in the rail industry by providing practical training and professional development courses in the field of railway technology and infrastructure, helping participants to develop.

MAURER is proud to be part of this important platform and to underline our commitment to civil engineering through our long-standing presence.

RELIABILITY, EXPERIENCE, TEAM SPIRIT // CELEBRATING OUR ANNIVERSARIES

There are many people at MAURER who are not only part of the team, but have become part of the fabric of our company, with some having been with us for ten, 25 or even 40 years!

The impressive loyalty and commitment of our long-standing employees at the Munich, Lünen and Bernsdorf sites deserve a big thank you.

Whether in production, in the office or out on the construction sites, their experience and dedication have helped make MAURER what it is today.

As a sign of our appreciation, we would like to extend not only the personal recognition of the two managing directors and the Head of HR, but also a small thank you in the form of a cash gift and a ticket for the "Aktion Mensch" charity lottery. For us, these anniversaries are not just numbers, but milestones full of stories, team spirit and success. Thank you for making MAURER your professional home!

MACIEJ KOWALSKI – MAURER Munich
TOMASZ GOLCZYK – MAURER Munich
TORSTEN EBERT – MAURER Munich
ALJOSCHA ALBERTER – MAURER Munich
MUHAMMET ALI ÜNALAN – MAURER Munich
LEOPOLD MEIER – MAURER Munich
BARBARA HOSSFELD – MAURER Munich
ABDESSAMAD CHERIF – MAURER Lunen
MAX WEIZEL – MAURER Bernsdorf
LARS DOMBEK – MAURER Bernsdorf

THOMAS HAHN – MAURER Munich
STEFAN HAUSNER – MAURER Munich
FRANK JUGEL – MAURER Munich
MICHAEL OHNHEISER – MAURER Munich
ANDREAS RASCH – MAURER Munich
SEBASTIAN UNGER – MAURER Munich
MANFRED ZORNEK– MAURER Munich

MEHMET AK – MAURER Munich
DAVUT SÖKÜLMEZ – MAURER Munich

HARALD MAIR – MAURER Munich

The friendship bridge between Brazil and Paraguay. Photo: Consórcio Ponte Foz

EXPANSION JOINTS FOR THE // FRIENDSHIP BRIDGE

Latin America's longest main span connects Brazil and Paraguay

Brazil/Paraguay. The completion of the Ponte da Integração Brasil-Paraguai, the friendship bridge linking Brazil and Paraguay, represents a dream come true for the region that has been 40 years in the making. The long-awaited second connection between the two countries has a main span of 470 m, making it the longest in Latin America. A project of this size required suitably large expansion joints, which were delivered by the structural protection specialists at MAURER.

The bridge is an asymmetric cable-stayed bridge with a total length of 760 m. The pylons reach up 190.17 m in Brazil and 185.04 m on the Paraguayan side. The bridge crosses the Paranà river and connects the Paraguayan city of Presidente Franco with Foz do Iguaçu in Brazil. It relieves the strain on the friendship bridge inaugurated in 1965. This older bridge will then be closed to heavy goods vehicles, which will only be allowed to use the new bridge.

Large swivel joist expansion joints

The record span required the largest expansion joint constructions ever built in either country. These flexible elements compensate for movements that the bridge makes due to traffic, wind and temperature fluctuations in relation to the mainland. Expansion joints also ensure that vehicles can drive across this juncture unimpeded, regardless of the transition construction's displacement. The joints are installed perpendicular to the direction of travel.

What makes the swivel joist expansion joints special is the way they allow for movements in all directions without damage or significant resistance. They permit lateral, longitudinal and vertical movements in relation to the direction of travel, as well as any rotations. As a result, the expansion joints are set to do their job for at least 50 years.

Welded on site

MAURER installed one each of its DS 640/800 and DS 320/400 expansion joints, allowing compensation for bridge movements of 800 and 400 mm respectively. The components are 13.6 m long and have two footpath sections each measuring 2.3 m.

Due to transport limitations, they were delivered in two parts before being welded together under MAURER's supervision at the end of 2022.

Elastomeric bearings from MAURER do Brasil

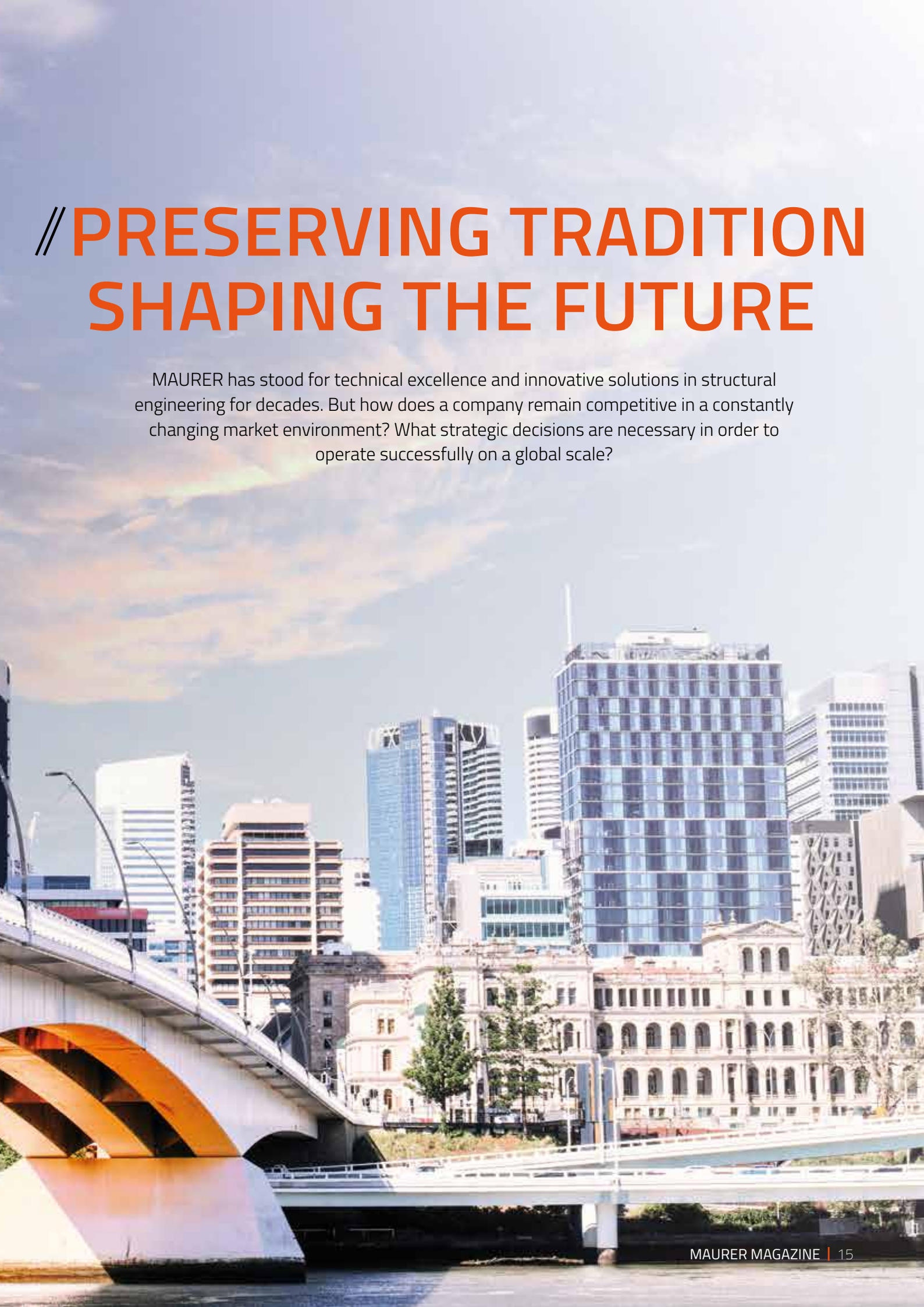
MAURER also supplied 67 elastomeric bearings for the friendship bridge. These were all produced by MAURER do Brasil in Sao Paulo. Construction of the bridge began in 2019. The main bridge section was completed in August 2023, with work on the ancillary structures still ongoing. The bridge was opened to traffic at the end of 2024. The project was led by the consortium Construbase-Cidade-Paulitec. Three more partners were involved in the cross-border project: the Itaipu Binational hydroelectric power station (a cooperation between Brazil and Paraguay), the Brazilian state of Paraná, and the Paraná Road Authority (DER-PR), which monitors all road construction projects in the state.

The bridge boasts the largest expansion joints ever installed in either country. These were delivered in two parts and welded together on site. Photo: Consórcio Ponte Foz

Captain Cook Bridge, Brisbane, Australia

// PRESERVING TRADITION SHAPING THE FUTURE

MAURER has stood for technical excellence and innovative solutions in structural engineering for decades. But how does a company remain competitive in a constantly changing market environment? What strategic decisions are necessary in order to operate successfully on a global scale?



Kazungala Bridge, Zambia, Africa

Mr Meincke, Mr Redecker, MAURER is well known for its solutions in highly complex construction projects. How do you intend to ensure that the company maintains its reputation as an innovation leader, and what new technologies or approaches are at the forefront for you?

M.M.: "Research and development should be carried out in close cooperation with partners, customers and suppliers. This cooperation allows us to develop innovative solutions and implement new production processes, which in turn powers further developments. Partnerships with universities are also of great importance. Universities are often pioneers in research and can provide us with access to the latest scientific findings and technologies.

Overall, it is important that we continuously invest in research and development, maintain strong partnerships and expand our technological capabilities to ensure long-term success."

H. R.: "Representation on expert committees and at the corresponding symposiums is vitally important to strengthening our public image. In addition, we must continuously train our employees and remain committed to attracting additional highly qualified specialists.

Furthermore, constantly developing our IT programs is essential. These include structural analysis and calculation programs, as well as building information modelling (BIM). These tools are crucial for the efficiency and accuracy of our work."

Markets are being buffeted by global crises and uncertainties. How is MAURER proactively dealing with these challenges, and what measures are planned to respond flexibly to economic and political changes?

H. R.: "That is a complex topic. MAURER should remain neutral and not take a political position. Our focus is on what we do best: structural engineering. We don't discriminate against anyone on the basis of skin colour, religion or political views. To be economically successful, we have to constantly adapt to the markets and continuously renew ourselves. The pace of change in future will be even faster, requiring a high degree of flexibility. Those who do not go along with this change will not be able to survive."

M.M.: "We must further strengthen our production network so we can respond flexibly to geopolitical changes.

The experience gained in the coronavirus pandemic and the Russia embargo gave us a blueprint, but ultimately a lot depends on the actions and motivation of our employees.

One of the MAURER Group's major strengths is the flat hierarchy. In times of crisis, quick decisions are important; in a storm on the high seas, the captain can't just call in a task force. At MAURER, we encourage independent action and entrepreneurial thinking, which helps us to overcome global crises."

What makes MAURER unique in the global marketplace, and how do you plan to build upon these strengths in a targeted manner to further consolidate the market position?

H.R.: "Uniqueness can quickly be perceived as arrogance. Our goal is to be one of the best and, if possible, the best. This requires hard work, endurance and continuity. The entire team must show resilience. We do not aim to be the cheapest, but rather the most reliable with the best customer service. The customer is king, and we have to make them feel that way too.

Even the best technology is only appreciated if it is delivered on time and works perfectly.

HOLGER REDECKER
//MANAGING DIRECTOR

Holger Redecker began his career at MAURER in 1991 as a student trainee while studying civil engineering. After graduating in 1996, he joined MAURER Lünen as a sales engineer.

In 2011, he was appointed manager of the Lünen branch and has been Managing Director with responsibility for technology and sales since 2023.

MAX MEINCKE
//MANAGING DIRECTOR

Max Meincke has a degree in industrial engineering and joined MAURER in 2009 as head of the purchasing department. Since then, he has held various management positions, most recently as Head of Corporate Development.

Mr Meincke has been Managing Director since 2018, and is responsible for commercial affairs as well as the company's national and international production sites.


Donnerserger Bridge, Munich, Germany

We offer our customers tailor-made solutions and develop products that the market needs. Close cooperation between development, design, production and assembly is crucial to incorporating all the expertise into improving our products.

We also accept development orders from our customers."

M.M.: "At our company, stagnation means regression. We must not rest on our laurels, and need to have the courage to take the more difficult path occasionally.

One example of a successful market launch is the introduction of the MAURER XW1 expansion joint, with which we have impressed our customers through innovative technology and reliable delivery."

Innovation starts with the team. How do you, as managing directors, promote a culture that supports creative thinking, personal responsibility and global cooperation?

H.R.: "We believe it is important to be approachable for our entire team, both at home and abroad, and to involve all employees so that everyone feels part of what we are doing. Personal responsibility must be encouraged, allowed and also expected. Our employees should take responsibility for their projects and be able to make their own decisions. This not only strengthens their confidence in their abilities, but also promotes their personal development.

Entrepreneurial thinking at all levels prevents waste of resources and unnecessary bureaucracy.

Management must give employees room for creative thinking. We won't get anywhere with unrealistic expectations and a strict nine-to-five mentality. You have to be passionate about your job and be willing to go beyond the classic eight-hour working day. "

M.M.: "Recognition and motivation are crucial to promoting a sustainable corporate culture. Managers must be willing to accept mistakes as part of the process and create an environment that fosters trust. Clear rules are essential.

As a medium-sized, family-owned company, we certainly demand more from our employees than a large DAX-listed corporation. But in return, we stand by our employees in good times and in bad – it's a mutual give and take.

We are proud that our employees are walking this path with us."

MAURER XW1

- Gap width up to 100 mm
- Reduced noise
- Maintenance free
- Regularly tested to TL/TP-FÜ

Where do you see MAURER in five to ten years?

H.R.: "Our goal is to continue to stabilise and expand MAURER after the challenges of the past few years. We are working continuously to lead the company into a positive future. If I could wish for anything, it would be gratifying to reach the mark of 2,000 employees by 2030."

MAURER develops protective systems for buildings that are not only durable but also sustainable and efficient. What new developments or materials do you use to meet this demand?

H.R.: "One major topic is, of course, green steel. However, we do not believe that this steel will be available in the short term, or that it will be economically competitive either nationally or, above all, internationally. Instead, we should concentrate on the longevity of our products. Standards such as TL/TP FÜ and innovations like hybrid construction methods and MSM® have already enabled great progress here.

In our opinion, steel is fundamentally a very sustainable material because unlike concrete or plastic, it can be reused"

M.M.: "Our MSM® sliding material allowed us to get rid of PFAS in bridge bearing production 20 years ago. With our new MSM® swivel traverse, we have succeeded in removing PFAS from expansion joints as well. Meanwhile, some countries in Europe are starting to address the issue of PFAS more intensively and to exclude it from tenders.

Ultimately, however, our efforts to make our products carbon neutral will depend on green steel being market ready. "

Extended infrastructure life cycles save resources and costs in the long term. How do MAURER products address these requirements in concrete terms?

M.M.: "Unfortunately, the durability and cost-effectiveness of our products are not always adequately recognised. There are only a few manufacturers and industries that can guarantee a service life of 50 years for their products."

H.R.: "Many markets have now recognised that it is more cost-effective in the long term to rely on products with a long service life. As a result, the specifications and requirements for the products have been adapted accordingly."

Reliability and minimisation of downtimes are crucial for heavily used bridge structures. How do your products help to meet these requirements in the long term?

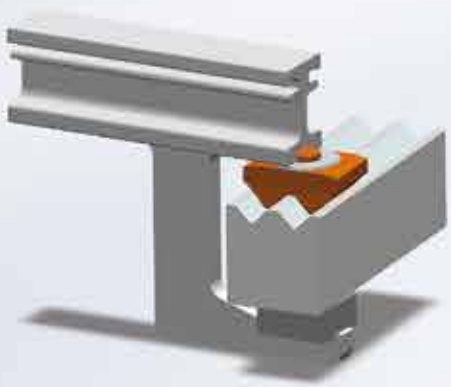
H.R.: "In addition to what I already mentioned at the beginning, we have developed solutions that considerably reduce or even completely avoid closure times when bridges need to be repaired.

These include various renovation methods for expansion joints such as MMBS and 'box-in-box' designs."

M.M.: "When it comes to bearing renovations, we have been replacing bridge bearings while maintaining road traffic for many

MAURER MSM® swivel joist

- Precise kinematic control
- Unlimited fatigue strength
- Flexible
- Safe for traffic
- Durable
- Excellent cost-effectiveness and sustainability



PFAS (per- and polyfluoroalkyl substances) are long-lasting chemicals that resist water, grease and dirt. They are found in many industrial products. MSM© (MAURER Sliding Material) is a patented, high-performance sliding material for bridge bearings with high durability.

MMBS® (MAURER Modular Bridging System) is a patented, flexible, modular expansion joint system for bridges that can compensate for a high degree of movement.

MMBS MAURER
Modular Bridging System

The MAURER MMBS lets road operators avoid complex traffic safety measures with transfer of traffic to the opposite direction, quickly, flexibly and without any major structural interventions.

years. Here we offer clever, sophisticated and well-engineered solutions that do not affect the flow of traffic."

What added value do you offer your customers through sustainable and long-lasting building protection systems, and can you give us an example of a current project?

M.M.: "Unfortunately, it is often the case that customers, especially construction companies and building owners, have little interest in sustainability, especially internationally. Their priority is to build as cheaply as possible. This leads to long-lasting variants being rejected on the basis of price, which often ties our hands.

However, I would like to give a positive example. For the Rader viaduct on the A7 in northern Germany, the client representative DEGES commissioned a study by a firm of consulting engineers.

This study showed that choosing a hybrid expansion joint design could lead to a significant reduction in the carbon footprint in the long term. This design can remove the need for replacement after about 20 years, which significantly reduces the generation of CO_2 resulting from the production of new expansion joints."

H.R.: "Although this decision meant a greater investment in the hybrid variant, it will lead to savings in both costs and CO_2 over the service life of the bridge. This is an absolute win-win scenario.

Unfortunately, as already mentioned, intelligent decision-makers who think long term are often a rarity.

MAURER has established locations in numerous countries, such as India and Turkey. What is the strategic significance of these markets, and how do you plan to expand your global presence?

M.M.: "We are very keen to expand our international presence. For a company like MAURER, being active around the world is vital.

Global expansion is an important part of securing our sites in Germany. The first steps were taken many years ago, and now it is our responsibility to continue this process successfully.

We receive great support in this effort from the Administrative Board and the owners of the company, who have clearly assigned us the task of expanding our foreign locations."

H.R.: "Our sites outside Europe in Turkey, Brazil, India and China give us access to the global market. It is time to further expand these sites and to use them not only for production, but also for sales and strategic purposes.

Our flagship plant in Bhopal, India, has been doing so excellently for years. Regular visits to all locations, together with support from the management and specialists in Germany, have led to positive changes in the recent past.

We are very optimistic about the future. Alongside our international expansion, we are also increasing our activities in the national market. The acquisition of STOG will allow us to further expand our market share."

To what extent does cooperation with local partners and offices influence product development and customisation? Are there examples that show how such cooperation has led to innovative solutions?

M.M.: "It is of existential importance to join forces with knowledgeable specialists. The requirements and specifications vary so greatly in different countries that we have to involve local experts to customise our products and improve them to meet local needs."

H.R.: "The Netherlands are a good example of this. In the past, products were sold and installed there according to German standards. Over the years, however,


Botlekbrug, Rotterdam, Netherlands

the Dutch have developed their own philosophy, adapted the products to their needs and created their own standard.

With the support of our on-site representatives and local engineering firms, we have changed our products accordingly and obtained the necessary local approvals. This close cooperation has led to the Netherlands being one of our strongest markets today."

Different markets require individual approaches. How do your international locations ensure flexibility and regional adaptability?

H.R.: "As described in the previous example, it's all about teamwork, motivation and finding local partners. This always depends on being able to recruit good employees for our team. But this is not something you can take for granted. You have to measure employees by the way they contribute to success."

M.M.: "Teamwork and the willingness to fully commit are essential to achieving our goals. We have to make sure that we bring the right talents on board and support them accordingly. Only in this way can we rise to the challenges and successfully serve our international markets."

Are there any regions or markets that you would like to develop for MAURER in the future to further promote growth?

M.M.: "Wow, where should I begin? We are already present in all the major markets, but there is still a lot of potential in Asia. We have already set the tone there with strategic decisions and corresponding developments.

The near future will show how correct our decisions were."

H.R.: "Africa could also be a region with potential, although political developments there pose a challenge. South America also offers opportunities. The North American market has developed very positively in recent years thanks to the outstanding commitment of our colleagues.

Given the current political situation in the US, however, I don't see any further growth there at present. Japan is another market in which we have invested and now our colleagues there have to show whether they are able to gain a foothold.

I think hydraulic seismic dampers are one area with great international potential. Here, the company has made investments in the future, such as the test stand in Munich. It would be great if this investment were to bear fruit."

Mr Redecker, what issues are your top priorities and what new ideas would you like to bring to sales and development?

Millau Viaduct, France

H.R.: "There is no top priority, as I work in many areas. In sales, I would like to support my colleagues and achieve success as a team.

Everyone should work for our joint success, not just for their own individual goal. In development, creativity is important and we need to implement ideas quickly. Ambition and teamwork are crucial to achieving and completing things."

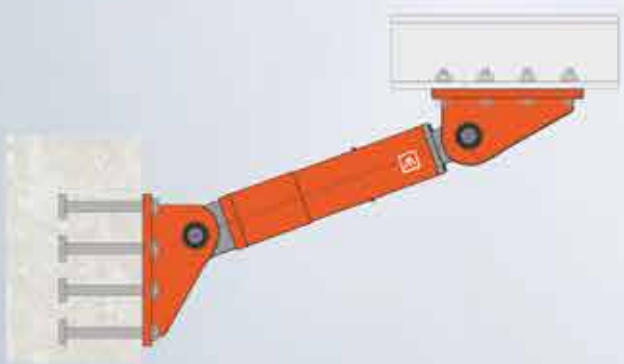
What do you think are the greatest strengths of the collaboration between headquarters and the branches? Where do you see room for improvement?

H.R.: "Collaboration has improved greatly over the last year and a half. The opening up as a result of staffing changes and the support of the directors have strengthened the communication between the locations.

This sense of a fresh start is a great strength that must be preserved.

There is still room for improvement, but I am optimistic that the development will take care of itself."

How do you ensure that innovative developments are seamlessly integrated into the sales process and successfully launched on the market?



MHD hydraulic damper

- Force limitation through a special valve system
- Imperceptible resistance to thermal movements
- Triple sealing system and pressure limitation system
- Damping function
- Blocking function from 0.1-0.5 mm/s
- Fast reaction force
- No regular maintenance

H.R.: "Good salespeople will immediately take up innovative developments and drive them forward with passion.

The key is to educate the sales staff and introduce them to the new products. As soon as they are convinced, the sales department will go all in."

You worked as a branch manager in Lünen. What experiences from that time are helping you now to optimise the cooperation between headquarters and the branches?

H.R.: "I know the needs of a branch office and the things that are often lacking there. I am now passing on this experience to improve cooperation.

It is difficult to explain this if you have not experienced it yourself, but with almost 30 years of experience under my belt, I am better able to understand the branches' perspectives."

What challenges and opportunities do you see specifically in working with international sites to interlink sales and development even more closely?

H.R.: "The challenge lies in the development department's ability to deliver innovation. If they don't deliver anything, the sales department quickly becomes frustrated.

At the same time, the sales department must clearly communicate its needs.

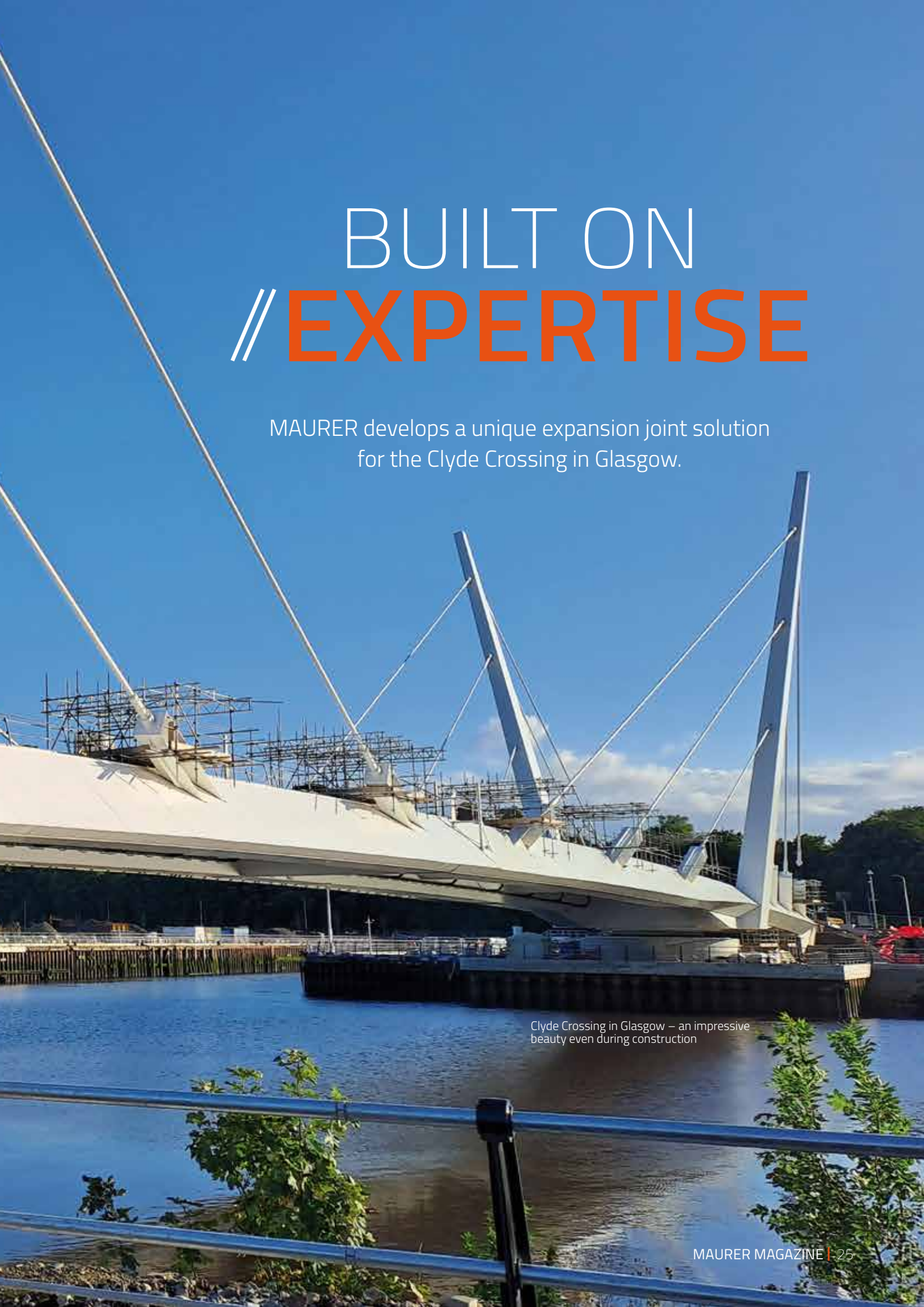
The opportunity lies in an exchange of innovations between the departments, especially abroad, to improve support and effectively implement new developments."

PLANT IN BHOPAL //MAURER SANFIELD INDIA LTD.

Multiple projects have already been completed or are about to be handed over to clients following coordination with the management of MAURER Sanfield India Ltd. and in close collaboration with MAURER SE in Munich.

BUILT ON //EXPERTISE

MAURER develops a unique expansion joint solution for the Clyde Crossing in Glasgow.



Clyde Crossing in Glasgow – an impressive beauty even during construction

The new Clyde Crossing near Glasgow is a double-swing bridge that opens in the middle. At this central point is the MAURER expansion joint (Type DS 4 HL). It features unique hydraulics that not only control the opening and closing of the bridge, but also fulfil the primary function of an expansion joint: accommodating bridge movements caused by temperature changes, wind and traffic loads.

The Clyde Crossing is a new engineering landmark in Scotland. The white steel bridge spans the River Clyde in Glasgow's Yoker district and connects the two towns of Clydebank and Renfrew. The impressive structure consists of two movable bridge sections, known as swing bridges. The bridge was built by a joint venture, with the southern half built by Hollandia Infra and the northern half by Smulders Iemants.

The pairs of pylons near the shore angle outward like cranes and rotate when the bridge opens. The Clyde Crossing measures 184 metres in length and, at 12.3 metres wide, is designed to accommodate vehicles, pedestrians and cyclists.

Bridges of this size typically have an expansion joint at the abutments at each end. This joint bridges the gap in the structure, which is necessary to accommodate the horizontal expansion of the bridge caused by to temperature differences, wind or traffic loads, for example.

However, in the case of the new double-swing bridge, the pivot points are located so close to the abutments that expansion joints were neither possible nor necessary there. The longer sections of the bridge are located toward the centre of the river, so the expansion joint also had to be placed there at the point where the bridge opens.

Technically, this meant that the horizontal opening and closing of the swing bridge, along with the longitudinal expansion and twisting, had to be integrated into a single component – an exceptional undertaking.

Expansion joint with multiple functions

"We received the initial enquiry in 2019 – which already shows how challenging the project was", recalls Jeroen Melief, branch manager at MAURER Netherlands BV.

Engineers from several companies were involved in the development of the custom solution, with MAURER taking the lead through its experts in Munich, Lünen, and Culemborg.

»We received the initial enquiry in 2019 – which already shows how challenging the project was.«

The design also had to meet Eurocode and British standards, while the highly intensive development and coordination phase was delayed by the effects of Brexit and the pandemic.

The solution was based on modern MSM® swivel joist expansion joints. These joints have been successfully integrated into complex bridges for decades.

The custom solution before installation: The left side is welded to the bridge. To the right of the profiles is the 40 cm wide section that will be placed against the northern half of the bridge.

The expansion joint during installation at the pier in Rotterdam. The white section in the bottom foreground is the table on which the expansion joint rests, together with the dark sliding plates on which it slides.

The installed expansion joint. In its closed position, it is only slightly wider than the white steel structure of the bridge Visible at the top are the two MSM® strips that absorb the pressure when the bridge closes.

Fully wired bridge during tests of the hydraulic functions.

The bridge from above with the expansion joint in the middle.

They allow for longitudinal movements of up to 3 m and more, as well as twisting in all directions. The parallel profiles, also known as plates, sit on top of the swivel joists and run perpendicular to the direction of travel. The swivel joists are slightly angled relative to the direction of traffic, ensuring that the opening and closing movements of the bridge are evenly distributed across the sealing profiles between the plates.

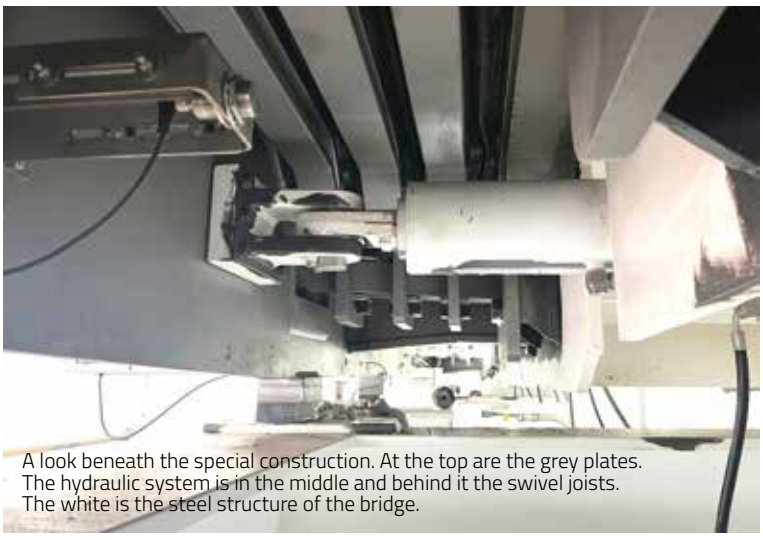
For the latest generation of MAURER swivel joist expansion joints, the plates run in W-shaped MSM® bearings (instead of simple elastomer bearings). These so-called catamaran bearings make the entire expansion joint system more efficient.

Thanks to the MSM® sliding material and the special bearing design, the profiles glide more easily and precisely over the joists. This prevents restraints and increases the service life.

Special features in Glasgow

For the project in Glasgow, the already sophisticated MSM® swivel joist expansion joint was also fitted with hydraulic control, sliding bearings and defined contact surfaces, before being installed on the southern swing bridge:

- The expansion joint sits on a table-like structure and can move without restraints on the special MSM® bearings.
- Just before the bridge pivots and opens, the hydraulic system on the underside retracts the expansion joint. This requires just a few millimetres prior to the bridge opening, as the sides of the bridge meet at an angle of 84° rather than at a right angle.
- As the bridge continues to open, the hydraulic system completely closes the expansion joint, ensuring it does not protrude.
- The northern bridge, which does not have an expansion joint, isprecisely constructed so that the expansion joint can fit against it.
- When the bridge closes again, the hydraulic system reopens the expansion joint so that it fits against the northern bridge.



A look beneath the special construction. At the top are the grey plates. The hydraulic system is in the middle and behind it the swivel joists. The white is the steel structure of the bridge.

- The clamping pressure is precisely controlled. It must be high enough to ensure safe passage even for heavy goods vehicles. There is no manual locking mechanism.

Expansion joint plus 40 cm

MAURER supplied a 13.2-meter-long MSM® swivel joist construction with a 320 mm expansion range (MAURER modular expansion joint type DS 4 HL).

Unlike typical expansion joints, which are welded on both sides, this joint was welded on only one side, which also included a 40-cm-wide strip to bridge the gap to the northern side. MSM® strips in the contact area protect the steel structures.

Opened bridge span during trial operation in Glasgow.

»For such a unique structure, we wanted to be sure.«

Both bridge sections were manufactured in Rotterdam, Netherlands. There, in early 2024, the entire custom expansion joint was mounted onto the southern bridge and the entire hydraulic system was intensively tested by an external company. "For such a unique construction, we wanted to be sure", explains Melief. "The greatest success was the moment when we tested it and it worked exactly as we had imagined." After the system was floated into place in Glasgow in April, all that was left was fine tuning.

The Renfrewshire Council of Glasgow City Region plans to open the bridge to traffic later this year.

// HELPING HANDS AT FRANKFURTER RING

With a paintbrush in one hand and a power drill in the other, Andreas Grosse is always ready to help

Mr Grosse, how long have you been working at MAURER, and in which areas have you worked so far?

Andreas Grosse: "I started at MAUER in the BMW Group in 1998, then switched to another company after three years. In 2004, I returned to MAURER and worked again at the BMW Group until 2015. Since then, I have been working in facility management, and took on the added responsibility for fleet management in 2017."

What training have you and your employees undergone?

A. G.: "I am a trained industrial mechanic, Detlef Biberger trained as a painter and varnisher, and Vladimir Zadorozhnyy is a lorry driver."

What exactly are your tasks at MAURER? What does a typical workday look like for you?

A. G.: "My main tasks include organising maintenance and repair work for building services, as well as general facility management duties.

In addition, I oversee and maintain the dormitory, take care of landscaping, and clear the paths to both the plant and the dormitory during the winter. I also manage courier trips and organise the fleet of 82 vehicles, from maintenance to accident processing, registrations and de-registrations, as well as the documentation and servicing of the pool vehicles. This alone involves around 200 workshop appointments per year."

»It's almost like being in contact with the entire workforce, like one big family.«

What excites you most about your job?

A. G.: "The job is very varied. I deal with many different tasks and people, which I really enjoy. It's almost like being in contact with the entire workforce, like one big family.

What I particularly appreciate at MAURER is the tradition, the down-to-earth nature, and the good working atmosphere."

What are the biggest challenges in your area?

A. G.: "The biggest challenge is definitely coordinating and completing the large number of different tasks that come in every day."

How is the collaboration with other departments?

Vladimir Zadorozhnyy and Detlef Biberger

A. G.: "The collaboration usually works well, although there are sometimes minor conflicts that we then resolve together."

You are also responsible for a large fleet of vehicles. What does your work in this area involve?

A. G.: "That's correct, I manage 28 company vehicles, 14 pool vehicles and 15 assembly vehicles, as well as 5 forklifts and 10 trolleys. I organise inspection appointments, take care of tyre changes and handle minor repairs. If there are any issues, I ensure that replacement vehicles are provided."

Your area of responsibility is quite broad. You and your team are called for everything, from burst pipes to keeping paths clear in the winter. Is that right?

A. G.: "Yes, exactly. We are responsible for servicing, repair and maintenance jobs big and small – from burst water pipes and painting work to landscaping and clearing the snow on the company premises."

In addition to the company premises, there is also a dormitory for MAURER employees that you take care of. What do you do there?

A. G.: "The dormitory is located in Milbertshofen, about five minutes by car from the company site. There are 21 apartments. Our team handles renovation and repair work, organises the furnishings, assembles furniture, takes care of waste disposal, and maintains the planted area."

What do you think are the strengths of MAURER?

A. G.: "The short communication paths when coordinating tasks. This makes a lot of things easier and helps us get things done quickly."

With all these tasks, do you have time for hobbies?

A. G.: "Not much, we are a family of six. But when I do have time, I enjoy riding motorcycles."

What do your colleagues do?

A. G.: "Detlef Biberger collects porcelain and is involved in women's football, Vladimir Zadorozhnyy goes fishing."

MAURER TECHNOLOGY IN EGYPT:
//SPEEDING AHEAD THROUGH HISTORY INTO THE FUTURE

The Grand Egyptian Museum (GEM) in Cairo is an architectural masterpiece and the largest archaeological museum in the world. MAURER plays a crucial role in ensuring the museum's stability by integrating eight specialised lead rubber bearings into the entrance area. Alongside this, MAURER is collaborating with SAMCO on a groundbreaking high-speed rail project that will connect Egypt with a 4,000-kilometre-long rail network by 2027.

The Grand Egyptian Museum (GEM) in Kairo.

View of the obelisk

Entrance hall

MAURER lead rubber bearings for the Grand Egyptian Museum in Cairo – a look behind the scenes

The Grand Egyptian Museum (GEM) in Cairo is not only the largest archaeological museum in the world, it is also an architectural masterpiece whose level of technical innovation is just as impressive as its cultural significance.

In the midst of this epic architecture, MAURER has taken on a significant role. Eight special MAURER Lead Rubber Bearings (MLRB bearings) with a capacity of 898 kN have been installed to ensure the stability and safety of a central obelisk in the entrance area.

898 KN

50 HECTARES

8X MLRB

BIS ZU

4,000

VISITORS DAILY

An architectural masterpiece

The Grand Egyptian Museum covers an area of more than 50 hectares and is only a few kilometres away from the world-famous Pyramids of Giza.

Its design is inspired by ancient Egyptian architecture, with modern elements complementing the construction. The building features monumental staircases, generous lighting and impressive lines of

sight to the pyramids. The GEM is designed as the largest archaeological museum dedicated to a single civilisation, and will display over 100,000 artefacts across over 50,000 square metres of space.

Highlights include the Solar Boat of Pharaoh Cheops and the world-famous collection of Tutankhamun.

MAURER Lead Rubber Bearings provide crucial stability for the entrance area

The eight lead rubber bearings from MAURER were specially developed to dampen the dynamic loads of the central obelisk in the entrance area of the museum.

The bearings consist of a combination of materials that are ideally suited for load distribution and vibration damping.

This design protects the structure from seismic impacts and maintains the building's stability.

This technology is of crucial importance, particularly in regions with heightened seismic risk.

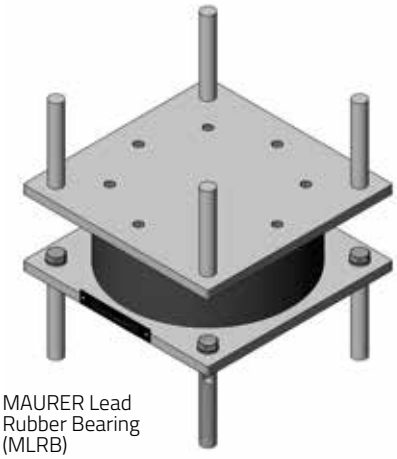
RAAD HAMOOD
//HEAD OF SALES MIDDLE EAST & AFRICA

1965	Born in Kanan, Iraq
1983	University in Munich
1983 – 1984	German language course
1984 – 1985	Attended preparatory year for studies at the Technical University of Munich
1986 – 1991	Studied mechanical engineering, graduating with a diploma
1993 – 2000	Project engineer at the University of the Bundeswehr, Neubiberg
2001 – 2003	Project engineer for analysis and optimisation of graphite electrodes in the steel melting process at SGL Carbon
2004 – 2007	Technical sales at MAURER Söhne for all Arabic countries
2008 – 2017	Sales Manager MENA (Middle East and North Africa) at MAURER AG
Since 2018	Regional Sales Manager at MAURER SE

The current state and phased opening

After nearly two decades of construction and numerous delays, the Grand Egyptian Museum partially opened in October 2024. The opening marked the start of a test phase in which up to 4,000 visitors a day are guided through the 12 main galleries that have already been completed.

These galleries include thousands of artefacts from various periods of ancient Egypt. However, the museum is still awaiting its grand opening, as the extensive Tutankhamun collection and the famous Solar Boat are not yet accessible.



MAURER Lead Rubber Bearing (MLRB)

LEAD RUBBER BEARING

MAURER Lead Rubber Bearings (MLRB) are seismic devices consisting of a steel-reinforced elastomeric bearing with an additional lead core. They react to horizontal displacements with elastic restoring forces and also insulate against vibration and structure-borne noise.

The bearings meet the EN 1337-3 and EN 15129 standards and can be calculated according to AASHTO or other guidelines if required. A damping of 30% and a minimum period of two seconds optimise the bearings, which can be further optimised through dynamic structural analysis.

The construction site is only a few kilometres away from the world-famous Pyramids of Giza

High-speed rail project: 2000 km connecting the cities of Alexandria, Cairo Ain Sokhna and Marsa Matruh

Full speed ahead into Egypt's future

In addition to its architectural projects, MAURER is also actively involved in Egypt's technological infrastructure. In close cooperation with SAMCO National Construction from Cairo, MAURER is producing sophisticated spherical bearings for Egypt's first high-speed railway project.

MAURER and SAMCO: production partnership for high-speed railway

The first high-speed railway project in Egypt involves the construction of a high-speed line approximately 4,000 kilometres long. The first phase of this project will connect the cities of Alexandria, Cairo, Ain Sokhna and Marsa Matruh, before being extended to the south to Luxor, Aswan, Hurghada and Safaga from 2025.

This line will fundamentally change transportation for both passengers and goods, with planned speeds of up to 250 km/h.

MAURER is contributing to this project by producing long-lasting MSM®/MSA® spherical bearings, which are specially designed to meet the requirements of the high-speed line. The bearings in the first phase, with an order volume of around 7 million euros, are a central element of the bridge constructions for the new rail line.

Locally produced bearings with innovative QR code technology

The spherical bearings are manufactured at SAMCO's production facility in Cairo and meet the highest standards. The Stuttgart Materials Testing Institute (MPA) inspected the quality of the first batch of bearings produced in September 2023 and gave it an excellent rating.

A special feature of these spherical bearings is the innovative QR code, which makes it possible to digitally retrieve all relevant documents and certificates, while also increasing efficiency in documentation. The final inlays, which form the core of the bearings, are manufactured at the MAURER production site in Munich and delivered to SAMCO for final assembly.

MAURER as a partner for culture and infrastructure

MAURER's involvement in the Grand Egyptian Museum and the Egyptian high-speed railway project is testament to its versatility as a company. While the MAURER Lead Rubber Bearings in the GEM help protect a cultural landmark, the spherical bearings play a key role in the development of modern infrastructure.

MAURER is therefore making a significant contribution to both preserving Egypt's cultural heritage and shaping its future.

MSM®/MSA® special bearing, manufactured in Cairo.

QR code containing all relevant documents and certifications.

MAURER BY SAMCO

AHMED EL DABAGHE // SPECIAL PROJECTS ENGINEER, OVM-MENA

2012	Education: B.Sc. in Engineering, Ain Shams University
2012-2014	Work experience: Planning Engineer, DETAC
2013	Successful optimisation through automated reporting systems
2014	- Certification: PMP prep course - Specialisation: Technical coordination, contract & financial management - Leading technical tests (wind, fatigue, etc.) - Project partners: MAURER (Germany), NRS (Norway), OVM (China) - General roles: Business development, MAURER products
2015–2019	Project: Road El Farag Bridge
2020–2021	Project: Cairo ring road expansion
2021	Major achievement: Secured $15 m El Farag Bridge contract
2021	Project: High-speed rail project
2022	Professional development: Time and cost analysis training
2023	Certification: Bearing installation, Stuttgart University

// INTERVIEW
AHMED EL DABAGHE & BASSEM KHALED

Insights into the partnership between MAURER and SAMCO.

How did the partnership between MAURER and SAMCO begin, and how has it developed over time?

Bassem Khaled: "The partnership began with a clear need in the Egyptian market for high-quality engineering solutions. SAMCO saw an opportunity to collaborate with MAURER, combining our local expertise with their globally recognised innovations.

Over time, this relationship has evolved into a strategic alliance, enabling us to address complex infrastructure challenges together."

What was the biggest challenge in implementing the partnership, and how was it overcome?

Ahmed El Dabaghe: "One of the biggest challenges was aligning MAURER's precision-driven approach with the dynamic nature of the Egyptian market, especially regarding tight supply schedules and sudden changes during projects.

To overcome this, MAURER's flexibility and SAMCO's on-ground knowledge helped us bridge gaps and deliver success."

What are the most significant advantages of working with MAURER on high-speed railway projects?

B. K.: "MAURER's leadership in technical innovation gives us a competitive edge. Their advanced spherical bearing technology ensures both quality and reliability for critical infrastructure."

A. E. D.: "From an engineering perspective, MAURER's solutions are highly adaptable, allowing us to meet the specific demands of ambitious projects like Egypt's high-speed railway."

The first high-speed railway project in Egypt is groundbreaking. What makes it unique or exciting for SAMCO?

B. K.: "This project represents a milestone in Egypt's infrastructure development. It has positioned SAMCO as the leading supplier of spherical bearings in the region."

A. E. D.: "For me, the excitement lies in the scale and complexity of implementing MAURER's bearings locally for the first time, setting a new benchmark for technical excellence."

How has the local production of MAURER MSM®/MSA® spherical bearings at SAMCO's Cairo facility impacted the project?

B. K.: "Local production has been a win-win for all stakeholders. It reduces logistical challenges, accelerates delivery timelines, and supports Egypt's economy by utilizing local materials and manpower."

A. E. D.: "From an operational standpoint, it ensures we can adapt quickly to changing project

demands, maintaining efficiency without compromising quality."

What benefits does the innovative QR code integration in the bearings provide for maintenance and documentation?

B. K.: "The QR code system revolutionises maintenance and inspection processes.

It provides instant access to critical data, such as design specifications and installation details, simplifying longterm management."

What are the next major steps in the partnership between MAURER and SAMCO?

B. K.: "We aim to expand our collaboration into other infrastructure sectors, such as bridges and urban transit systems.

Our goal is to remain leaders in delivering advanced engineering solutions across Egypt and the region."

A. E. D.: "Additionally, we'll focus on further localisation of production and incorporating smart technologies to enhance the performance and sustainability of future projects."

How do you ensure that production at SAMCO meets international standards like those verified by the Stuttgart Materials Testing Institute?

A. E. D.: "By implementing MAURER's rigorous quality control protocols and conducting regular audits with MPA Stuttgart. Their expertise ensures every bearing produced at SAMCO adheres to the highest global standards."

What role do high-speed railway projects like this play in transforming Egypt's infrastructure and economy?

B. K.: "They are pivotal in enhancing connectivity, boosting trade, and supporting tourism. Projects like this not only modernise our transportation systems but also position Egypt as a regional hub for logistics and infrastructure."

A. E. D.: "On the engineering side, these projects showcase Egypt's ability to deliver world-class infrastructure, paving the way for future innovations and investments."

Looking ahead, how does SAMCO envision its role in Egypt's growing infrastructure needs through its partnership with MAURER?

MAURER BY SAMCO

BASSEM KHALED
// HEAD OF STEEL DEPARTMENT – SAMCO & SPHERICAL BEARINGS – PROJECT SUPERVISOR

2005	Fellow, Egyptian Syndicate of Engineers
2009	NDT Level II Certification, Cairo
2010	ISO 9001 training, Cairo
2015	- M.Sc. Structural Engineering, Ain Shams - Project Mgmt Standards course, AUC
2018	- MBA in Project Mgmt, AASTMT
2023	Certification: Specialist for bearing installation, Stuttgart University
2024	- Steel Consultant Certificate, Syndicate of Engineers - Multidisciplinary coordination skills - Expertise in design standards - Proficiency in structural analysis - Advanced problem solving

Das Team der Mitarbeiter von MAURER und SAMCO.

B. K.: "As one of Egypt's leading contractors, we are committed to driving the nation's infrastructure modernisation. With MAURER as a partner, we have the perfect synergy to tackle ambitious projects."

A. E. D.: "Together, we aim to pioneer new technologies, strengthen local capabilities, and create infrastructure solutions that are efficient, sustainable, and transformative."

PURE ADRENALINE!

THE NEW „SKY THRILL“ AT THE UMADUM FERRIS WHEEL

The Umadum ferris wheel in Munich's Werksviertel-Mitte district offers a breath-taking attraction: **"Sky Thrill – The Adrenaline Platform":** an extraordinary experience for the brave. For this special kick, one of the gondolas is replaced by an open platform with a grating floor, delivering the maximum dose of adrenaline.

- **15-minute ride:** At heights of up to **80 metres** on the open platform, **goosebumps moments** are guaranteed.
- **For six people:** The platform accommodates six guests, accompanied by a **safety operator.**
- **Requirements:** Minimum age of **14 years** and a minimum height of **1.40 metres.**
- **Opening hours:** The ride is available in **hourly time slots – Fridays from 4:00 pm to 8:00 pm, Saturdays** and **Sundays from 2:00 pm to 8:00 pm.***
- **Price:** € 49 per person.

For those who want to experience the ultimate rush and a spectacular view over Munich, the Sky Thrill is an incomparable experience.

The first rides started in July 2024 as part of the Umadum summer festival.

Tickets and further information are available in the Umadum online shop.

SKY THRILL
DIE ADRENALIN PLATTFORM

www.umadum.info

umadum
Das Münchner Riesenrad

6

years of Umadum in the Werksviertel-Mitte.

27 gondolas with 422 seats, including themed gondolas such as the cuddle, beach or meeting gondola.

78 m

Total height

Duration of a ride: 15 minutes.

Entry in the Guinness World Records as the largest trans-portable ferris wheel in the world.

Operated with green energy & energy recovery.

Breathtaking panoramic view over the entire city all the way to the Alps.

Culinary rides such as a white sausage breakfast or a hearty dish at lunch.

MAURER BERNSDORF
//A LONG-STANDING COMPANY THRIVING THROUGH CHANGE

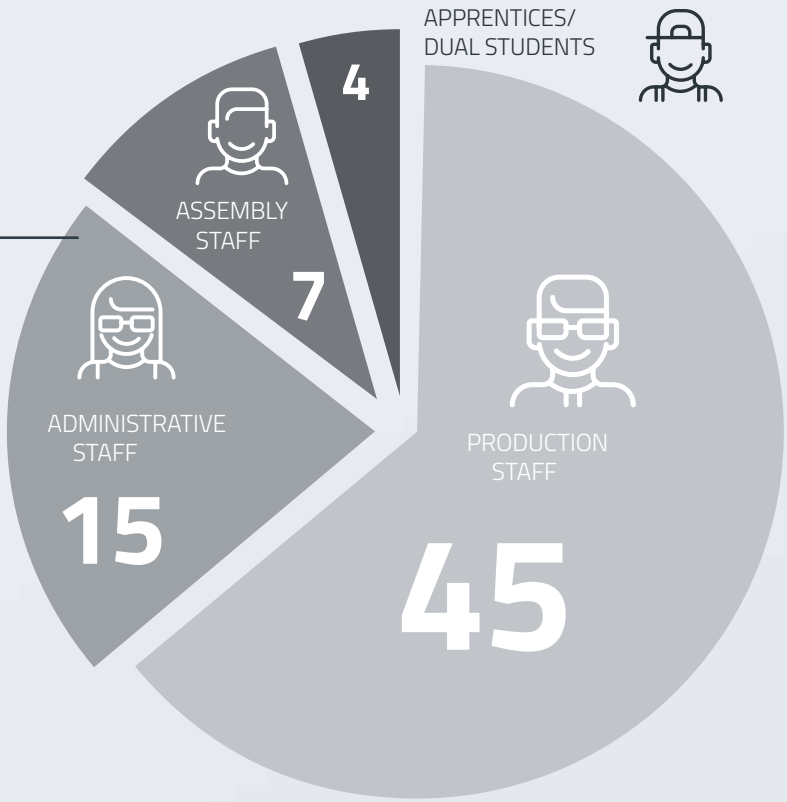
After reunification, many companies in East Germany faced major challenges. For Bernsdorf, however, 1990 brought a great opportunity to start a close cooperation with Maurer Söhne. The focus was on modernizing the factory and providing targeted training. Production of bridge bearings began in 1991 and the site developed into a hub for serving the East German market.

Fall of the Berlin Wall brings change

Bernsdorf is located on the edge of the Lusatian Lake District, a unique region in Saxony that was shaped by the coal mining industry.

Today, the landscape offers numerous leisure activities, including cycling, hiking and water sports. Despite its idyllic surroundings, Bernsdorf remains shaped by its industrial past and will continue to develop in the future. A planned training facility for the German army will open up new opportunities in this regard.

OUR EMPLOYEES IN **BERNSDORF**



Infrastructure and connections

Bernsdorf benefits from a solid infrastructure and good transport links. At just 15 kilometres from the towns of Kamenz and Hoyerswerda, and around 40 kilometres from the Saxony state capital of Dresden, Bernsdorf is an attractive location for companies.

The B97 main road makes Bernsdorf easily accessible for business travellers, commuters and delivery vehicles.

History of the company

The history of the Bernsdorf site goes back to 1915, when Heinrich Haas founded the company as a mechanical engineering and machining workshop. The business supplied accessories for the lignite industry. After being taken over by his sons Helmut, Martin and Heinz Haas, the company continued to develop steadily.

From 1965, the first roller and line rocker bearings were produced under partial state control. In 1972, the company was fully expropriated, nationalised and continued as "VEB Brückenausrüstung" in the GDR.

Numerous major projects were completed up to 1989. It was the only company in the former GDR that manufactured bridge bearings and expansion joints. With the reunification of Germany, new opportunities arose

In 1990, Maurer Söhne signed a license agreement for the production of expansion joints and took over the plant completely on July 1, 1991.

Thanks to extensive modernisation, renovation and the construction of a new production hall, the Bernsdorf site has been able to maintain its importance in the industry to this day.

Production of expansion joint systems

The main focus of the Bernsdorf plant is the production of expansion joint systems, in particular single and multi-seal MAURER expansion joints. These are used in both road and rail bridges.

The plant meets the highest quality standards and has all the necessary certificates and approvals. This ensures the high reliability and durability of the products, which is crucial for MAURER.

EXPANSION JOINTS FOR **ROAD BRIDGES**

Single-seal expansion joints

- Type D1
- Type XC1
- Type XC1-R
- Type XL1

Multi-seal expansion joints

- Type D/DT 2 to 5
- Type XD/XT 2 to 5
- Type DS 2 to 7
- Type XS 2 to 5

EXPANSION JOINTS FOR **RAIL BRIDGES**

Single-seal expansion joints

- Type DB40
- Type DB 80
- Type DB 130

Multi-seal expansion joints

- Type DB160
- Type DB 260

Superstructure end joints

- Type M-ÜF 1903
- Type M-ÜF 1905
- Type M-ÜF 1906

EXPANSION JOINTS FOR **FOOTPATH BRIDGES**

Single-seal expansion joints

- Type K30/50
- Type E1-80

Multi-seal expansion joints

- Type E2 - 160
- Type E2 - 200

Company divisions and management

The Bernsdorf site is led by a dedicated management team. The company is successfully managed under the leadership of Max Meincke and the personal commitment of plant manager Uwe Haas. A total of around 70 employees ensure that the company will continue to play a significant role in the industry in the future.

Staff numbers and training

There are currently 45 employees in production, 15 in administration and seven in assembly. Three construction mechanics and one dual student are currently being trained. The company is particularly proud of the commitment and good cooperation of all employees, helping to secure the future of the plant in Bernsdorf.

A plant with a bright future

MAURER SE in Bernsdorf is an impressive example of successful structural change after the fall of the Berlin Wall.

Bernsdorf has developed into an important centre for the construction and refurbishment of structural protection systems for bridges and infrastructure.

With over 100 years of history and the continuous expansion of production capacities, Bernsdorf remains an integral part of the Maurer family, and a symbol of how tradition and progress can go together.

YAS Hotel, Abu Dhabi, UAE

ELITE ROAD SUPPLIES CO. – ECO
ABU DHABI / UAE

TECHNICAL SOLUTIONS // **FOR THE CONSTRUCTION INDUSTRY IN THE GULF REGION**

Elite Road Supplies Co. – ECO was founded in the United Arab Emirates (UAE) in 1997 and has since become an indispensable provider of technical solutions for the region's construction industry. Through partnerships with leading manufacturers from Europe and the United States, including MAURER SE, ECO uses innovative technologies to meet the growing demands of modern infrastructure. The company delivers turnkey solutions that promote efficiency and sustainability in construction, and meet the highest technical standards.

The Shamal Bridge in Ras Al Khaimah - the longest steel arch bridge in the world.

ECO's vision and mission

ECO's vision is to be recognised as a leading provider in the GCC* (Gulf Cooperation Council) region and the Middle East, focusing on comprehensive, innovative solutions for the construction industry. The aim is not only to master technical challenges, but also to ensure excellence and customer satisfaction. To achieve this, the company relies on continuous training and development of its employees to build long-term successful relationships with partners and customers.

Partnership with MAURER SE

One of ECO's outstanding partnerships is its cooperation with MAURER SE, the world's leading provider of structural protection systems. This partnership enables ECO to offer products and services in areas such as expansion joints, structural bearings, seismic protection systems and vibration dampers. Thanks to these technologies, ECO is seen as a reliable system supplier for ensuring the durability and safety of infrastructure projects in the region.

Technical expertise and services

ECO offers a wide range of services that are individually tailored to the needs of the given structures and customers. These include:

- **Design & engineering:** ECO develops customised designs based on comprehensive technical expertise that precisely meet customer requirements.
- **Manufacturing:** ECO relies on the latest technology to reduce operating costs and promote sustainability in construction.
- **Supply:** Thanks to an extensive local network, ECO ensures efficient and timely delivery of the required components.
- **Site supervision:** Highly qualified engineers ensure safe and environmentally friendly installation of the systems, always with the highest safety standards.

The combination of these services makes ECO an indispensable partner for complex construction projects throughout the Gulf Cooperation Council region (GCC). The GCC consists of six member states on the Arabian Peninsula: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE).

*ECO aims to be recognised as a leading provider in the GCC region and the Middle East, focusing on comprehensive, innovative solutions for the construction industry. The Cooperation Council for the Arab States of the Gulf (GCC) is a political and economic union comprising six Gulf states, including Saudi Arabia, the United Arab Emirates, Qatar, Kuwait, Bahrain and Oman.

The opening ceremony for the Guinness World Record-holding Ras Al Khaimah Steel Arch Bridge built by Elite Road Supplies Co. – ECO. In attendance were His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister and Ruler of Dubai, His Highness Sheikh Mansour bin Zayed Al Nahyan, Vice President, Deputy Prime Minister and Chairman of the Presidential Court, and His Excellency Dr Abdullah bin Mohammed Belhaif Al Nuaimi, Minister of Infrastructure Development, Chairman of the Federal Transport Authority – Land and Maritime.

Innovation and sustainable solutions

ECO is committed to promoting innovative and sustainable solutions in the construction industry. A prime example of this is the Shamal Bridge, which holds a Guinness World Record. This 32.39-meter-span underground metal bridge was built as part of the Ras Al Khaimah Ring Road and is one of the most durable and efficient bridges in the region.

The Shamal Bridge: A record-breaking project

The Shamal Bridge, part of the Emirates Road, connects the northern part of the Emirates with the rest of the country. With a capacity of 2,000 vehicles per hour, it is not only extremely durable, but also offers economic advantages over conventional concrete bridges. Its lifespan is planned to be over 100 years, which minimises maintenance and makes the project a milestone in engineering.

The distinction as the largest underground metal bridge in the world is also a testament to ECO's technical expertise in driving technological innovation and making infrastructure in the region sustainable.

The success story of Osama Al-Rawi

ECO has been managed by Mr Osama Al-Rawi since its foundation in 1997. Under his leadership, the company has grown from a small subcontractor to a leading supplier in the construction industry. Mr Al-Rawi pursues an uncompromising strategy based on innovation, quality and operational excellence.

His vision is for ECO to always adopt the latest technologies and techniques to meet the growing challenges of the construction industry in the GCC region.

Our MAURER ECO UAE team

OSAMA AL-RAWI // MANAGING DIRECTOR – ECO

2017 - TODAY

Owner and Managing Director
Elite Road Supplies Co. – ECO, Abu Dhabi, UAE

- Implementation of the corporate vision and business objectives.
- Management of operational processes to increase efficiency and optimise costs.
- Building and mentoring a high-performance management team.
- Development of financial strategies to ensure stability.

1997 – 2017

Partner and Technical & Commercial Director
Elite Road Supplies Co. – ECO, Abu Dhabi, UAE

- Development of strategic technical and commercial objectives.
- Management of the technical team to ensure compliance with quality and safety standards.

1990 – 1997

Partner and Commercial Director
International Society for Industrial & Commerce (ISIC), Tunis, Tunisia

- Development of commercial strategies for growth.
- Carrying out market analyses for business expansion.

EDUCATION

1985 – 1990
Jordan University of Science & Technology, Irbid, Jordan B.Sc. - Telecommunications Engineering

CORE COMPETENCIES

- Proven track record of corporate growth
- Leadership qualities and optimisation of resources
- In-depth knowledge of financial management
- Crisis management and problem solving
- Team building and diversity management

MSE Wall - MASAR (KAAR) in Makkah, Saudi Arabia

Through strategic partnerships with global providers such as MAURER SE, ECO has been able to expand its portfolio and establish itself as a market leader throughout the region.

Expansion plans: growth and future goals

ECO has undergone an unprecedented expansion over the past few decades. Some of the major milestones include expansion to Qatar, Saudi Arabia, Bahrain, Kuwait, Oman and Iraq.

This expansion was only possible through targeted strategic planning and investments in new markets. Partnerships with MAURER SE and other international providers have given ECO access to advanced technologies that also make the company competitive in the global market.

»Our goals are clear: we want to become smarter and bigger.«

In the coming years, ECO plans to enter the European market to strengthen its global presence.

Managing Director Osama Al-Rawi emphasises the importance of a strategic focus on the private sector, which is also playing an increasingly important role in Europe. Around 50% of future investments will come from the private sector, opening up new growth opportunities for ECO.

Vision for the future: becoming smarter and bigger

The transformation of the GCC region offers ECO unique opportunities for growth and innovation.

With a clear focus on quality, customer satisfaction and sustainability, ECO is well positioned to meet the challenges that lie ahead in the construction industry. "Our goals are clear: we want to become smarter and bigger", says Osama Al-Rawi.

"A partnership built to last" Graffiti on the occasion of the fair "Middle East Rail 2024, Dubai"

// INTERVIEW
ÖNDER INCIR

Interview with Önder Incir, Sales Director of MAURER in the Gulf States

Mr Incir, as Sales Director of MAURER in the Gulf States, what should our colleagues and partners know about you?

Önder Incir: "I have extensive experience as a civil engineer, particularly in the highway and energy sectors (oil and gas), as well as infrastructure and the construction, planning and maintenance of bridges. My career has taken me through numerous countries, including Germany, the UAE, Qatar, Turkey, Kuwait, Bahrain, Oman, Azerbaijan, Uzbekistan, Kazakhstan and Ukraine."

What role do you play in the cooperation with ECO?

Ö. I.: "In my role, I discuss strategic and sensitive issues in order to gain a deep understanding of our customers' needs. I also build and maintain long-term customer relationships.

A key part of my job is managing the proposal development processand meeting deadlines for our proposal teams. I also coordinate with suppliers and subcontractors when drafting contracts and agreements to make sure that projects run smoothly.

In addition, I advise planners and project engineers prior to the development phase, and maintain regular contact with the authorities and construction companies."

What characterises your collaboration with Osama Al-Rawi?

Ö. I.: "Mr Al-Rawi and I work very well together and are constantly exchanging ideas. We develop draft proposals effectively through regular team meetings and discussions.

Mr Al-Rawi and I not only share a professional relationship, but also a friendship that enriches our collaboration. This not only makes communication easier, but also promotes a positive working environment."

»Mr Al-Rawi and I not only share a professional relationship, but also a friendship.«

What soft skills do you think are particularly important?

Ö. I.: "The ability to work in a team is essential; you need to be comfortable in a team-oriented working environment and also be prepared to lead when necessary.

In addition, good interpersonal skills are crucial. An analytical approach, negotiating skills and the ability to complete projects quickly are just as important as enjoying continuous learning. These soft skills go a long way towards being successful in our dynamic industry."

ÖNDER INCIR
// REGIONAL SALES DIRECTOR – MIDDLE EAST OPERATIONS

Born: in Izmir (Turkey)

Nationality: Turkish

Residence: Germany (permanent)

Family: Married

09/2001 - 06/2005	Dokuz Eylül University (Izmir, Turkey), Bachelor's degree in Civil Engineering, thesis on the topic of "Pile Foundations"
05/2015 - now	Maurer SPS GmbH (Munich, Germany), sector: construction, mechanical engineering, production
05/2015 - 06/2023	Business Development Manager - Middle East
07/2023	Regional Sales Director - Middle East

//STORAGE, LOGISTICS AND LOADING

– the man who pulls the strings.

Hello Mr Pintaric, how long have you been at MAURER?

Dragan Pintaric: "I joined MAURER on February 8, 2006, so it's already been a full 19 years."

Please describe your job. What does a typical workday look like for you?

D. P.: "My day always starts with a cup of tea. After that, I prepare everything for the day before my colleagues arrive. Once everyone is here, I assign tasks, help with goods bookings, and handle meetings. I am the point of contact for all kinds of questions and problems, as well as solving them."

How large is your department, and what do your employees do?

D. P.: "There are about 15 of us working in storage, logistics and loading. Our tasks include picking, packing and loading parts, moving them in and out of storage, bookings and inventory."

What do you enjoy about your job and working at MAURER?

D. P.: "I am fascinated by MAURER's products and the fact that the company has been around for 149 years. It's great to be part of that history. Every day, I deal with new people and parts, organise and support processes, and carry out automations."

What are the biggest challenges in your area?

D. P.: "The biggest challenge is planning the day so that logistics processes run smoothly without any disruptions in production, planning or shipping."

How is the collaboration with other departments?

D. P.: "Very good. We get along with all departments and help each other. Everything runs really smoothly."

How many deliveries do you receive daily, and what gets delivered?

D. P.: "We have a lot of deliveries every day and hundreds of bookings. Everything the company orders comes to us first.

This ranges from nuts and bolts to steel sheets, furniture and IT hardware. All these goods are stored and distributed to the appropriate areas with picking lists."

I hear the atmosphere in your team is particularly good. How do you explain this?

D. P.: "Yes, that's true. We make a point to greet each other and shake hands in the morning. We talk openly about personal and work-related issues, and help each other out. My motto is: treat others the way you would like to be treated."

What do you think are the strengths of MAURER?

D. P.: "Innovation, flexibility and the employees."

What do you see as challenges ahead for MAURER?

D. P.: "We will definitely automate more processes and introduce more artificial intelligence.

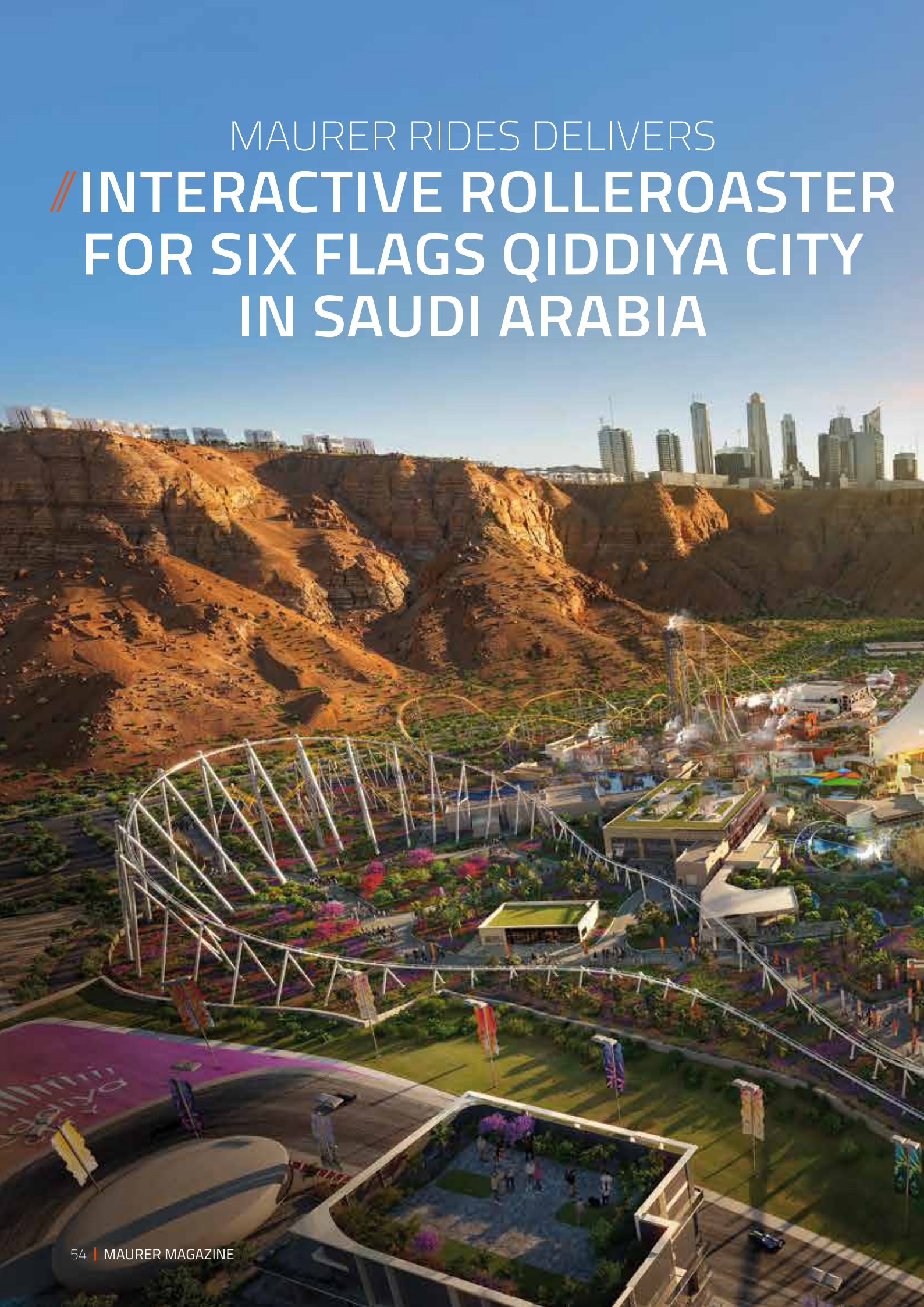
Staff need to be trained and prepared for this. It would be nice to have internal company events together with our subsidiaries and partners. This would strengthen the cohesion even more."

Do you have time for hobbies besides work?

D. P.: "Yes, I am very sporty. I like running, cycling and going to the gym, and I love to travel."

MAURER RIDES DELIVERS

//INTERACTIVE ROLLERCOASTER FOR SIX FLAGS QIDDIYA CITY IN SAUDI ARABIA




Six Flags®
Qiddiya City

Maurer Rides, a leading manufacturer of rollercoasters and amusement rides, is proud to announce the upcoming debut of its latest attraction, The Sea Stallion, at Six Flags Qiddiya City in Saudi Arabia. This exhilarating ride offers visitors an unforgettable, interactively controlled experience, adding to the impressive entertainment and tourism landscape of Qiddiya City.

Qiddiya City: a new hub for entertainment, culture and sports

Six Flags Qiddiya City is a joint venture between Qiddiya Investment Company and Six Flags Entertainment, and is part of the ambitious Qiddiya City project. Built from the ground up, Qiddiya City is a global destination centred around fun and adventure.

Situated in the heart of the Tuwaiq Mountains, just 40 minutes from Riyadh, the city offers a seamless and groundbreaking blend of entertainment, sports and culture. The theme park will feature six uniquely designed areas known as lands, immersing visitors in a world of excitement and adventure.

The Sea Stallion: where desert and sea combine

The Sea Stallion roller coaster will be located in the Discovery Springs land, which celebrates the timeless connection between the desert and the sea. This attraction will harmoniously merge the elements of earth and water, taking visitors on a thrilling ride aboard a mystical sea stallion through a landscape of waterfalls, caves and geysers.

Technical highlights and an interactive experience

The Sea Stallion boasts an impressive set of specifications. As a Maurer Spike Racing Coaster, it offers a high-speed ride with interactive speed control and a boost button, allowing guests to tailor their experience.

TECHNICAL SPECIFICATIONS

- Coaster type: Spike Racing Coaster
- Passengers per vehicle: 2
- Dimensions: 80 m x 80 m (262 ft x 262 ft)
- Track length: 510 m (1673 ft)
- Height: 12 m (39 ft)
- Number of vehicles: 8
- Ride duration: 62.8 sec
- Station: Continuous operation
- Interactivity: Speed control plus boost button
- Torque: 1050 Nm
- Acceleration: Up to 1.2 g
- Max speed: 70 km/h (44 mph)

KEY FEATURES OF THE SEA STALLION

- Interactive speed control
- Möbius layout for duelling starts
- Interaction with the adjacent water attraction
- Ground-hugging track design with tunnels and water elements
- Action-packed experience with up to five vehicles on track simultaneously
- Automatic station cooling for vehicles

The ride features a 510-meter track, eight vehicles, and a duelling Möbius layout that allows for exciting races between vehicles. The track design is close to the ground and integrated with the neighbouring water attraction to amplify the thrill, making The Sea Stallion a stand-out addition to the park.

Part of the Qiddiya City vision

Qiddiya City plays a key role in Saudi Arabia's bold initiative aimed at diversifying the nation's economy and positioning the Kingdom as a global leader in tourism and entertainment. This multi-billion-dollar development is set to drive economic growth, create thousands of jobs and attract millions of visitors annually. The grand opening of Six Flags Qiddiya City and the adjacent Aquarabia water theme park in late 2025 will establish a new benchmark for family entertainment in the region.

Both parks will support the development of local talent and elevate the Kingdom's attractions industry.

Project status and further information

The Sea Stallion is currently being assembled in Qiddiya City, Saudi Arabia, with extensive testing scheduled in the coming months.

For more details on The Sea Stallion and other exciting Maurer Rides projects, visit

www.maurer-rides.de


Six Flags

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106.GB.400.05.2025