



**KAEFER**

# K-WERT 39 2021/22

THE KAEFER MAGAZINE FOR EMPLOYEES, CUSTOMERS AND PARTNERS



## A GLOBAL OUTLOOK AT YOUR FINGERTIPS

Explore stories, projects and people  
from KAEFER in this year's K-WERT.

This document is not a fully designed magazine  
but intended as a readable copy of online  
contents for offline use.

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*\* All pictures shown that do not follow current social distancing guidelines were shot before March 2020. Please note that COVID-19 regulations may vary by country and region.*

Message from the Executive Board

## We're all on the right path



### **Roland Gärber:**

We are delighted to share the new digital K-WERT with you this year. Thank you for reading and we hope you will find the stories from around the KAEFER world interesting and enjoyable.

### **Steen E. Hansen:**

To say the last several months were a challenge would be an understatement. But whilst we realise how difficult things have been for all of us on both a personal and a professional level, we wanted to take this opportunity to highlight great developments in the KAEFER Group.

### **Roland Gärber:**

The news we have received over the last 21 months have shown us that we are on the right path to deal with the pandemic. We're also incredibly thankful to all our employees worldwide who have worked tirelessly and with amazing dedication during these still difficult times.

Nevertheless, we're fully aware that we are thanking you in the context of many colleagues becoming seriously ill and some passing away as well. So, we are giving thanks as well as providing our heartfelt condolences to the families, colleagues, and friends who have lost someone during this pandemic



## **Steen E. Hansen:**

The technological change we've experienced over the last several years has been vast and far reaching. I think I can speak for all of us when I say that the pandemic has accelerated the push for even greater digitalisation and brought the possibilities afforded by technological progress to the forefront. We have seen how tools such as the DPMS – The Order to Invoice Solution have made a huge difference in terms of efficiency, safety and transparency on sites all over the world. And we've witnessed how robots powered by artificial intelligence can detect corrosion under insulation and help our clients proactively maintain their facilities.

This is all part of our commitment to being the most reliable and efficient partner to our clients and providing technical industrial services that eliminate energy waste. In that vein, LEAN development has also been very positive, with coverage and maturity targets exceeded, leading us to aim even higher next year.

## **Roland Gärber:**

As you can imagine, health and safety has been even more in the spotlight this past year and I'm pleased to say that our Health & Safety figures are exemplary – especially, considering continuous hygiene regulations on construction sites. These developments demonstrate the progress we've made in making safety culture an integral part of the KAEFER culture.

The dramatic changes to the way we interacted with one another over the last 21 months has led to a renewed focus on our digital roadmap as well as on how we improve our communication. Examples include our upgraded intranet ONE.2, as well as several local employee communication tools implemented to better reach people and foster more transparency and openness. This has contributed to a greater sense of togetherness and a positive corporate culture, which also contributes significantly to our diversity. Regardless of whether it's in the territory of the Kikumkalum in Western Canada, the vast expanses of Australia, the urban areas of Brazil or in our many locations in Europe, KAEFER is proud to be as diverse as the locations we work in.

## **Steen E. Hansen:**

Even though sustainability has been at the top of our agenda for many years, now it's time to make everything more measurable, to express ESG (Environment, Social, Governance) in concrete, key performance indicators following all regulations that are being implemented worldwide with the goal to achieve the set targets. As from 2021 our Sustainability Department has the support of an interdepartmental and international Sustainability Working Group, that meets regularly to tackle the most important development in this field.

## **Roland Gärber:**

The constant quest for innovation and doing things better is a core part of KAEFER and we can see further examples in initiatives such as the Innovation Day in South Africa, the UK testing a scaffolding robot or back at headquarters in the dedicated Corporate Innovation & Technical Excellence team. The curiosity, creativity and craft in the heart of our people are very much alive and well in all aspects of our company and that makes me proud.

## **Steen E. Hansen:**

And we have saved the latest news for the end. And this is really a very important one! We are delighted to announce that KAEFER will enter into a partnership with the Germany based SMS group and the European investor Altor, who, together, will become a 50% shareholder in KAEFER. The investment agreement has been signed by the existing KAEFER shareholder family, SMS and Altor on 08 December 2021. The agreement is still subject to customary regulatory clearance.

## **Roland Gärber:**

For sure you have heard or read about our KAEFER LIFT strategy, which is clearly a growth strategy. This strategy made us look for a strong partner that supports the company's goals. And we are very happy to announce that we have found this partner. With SMS/Altor, KAEFER is well positioned to succeed in the highly competitive market for technical industrial services. We also plan to continue growing our global and local market positions and to develop additional abilities to focus

on sustainable developments like decarbonisation, energy transition and LNG.

**Steen E. Hansen:**

With the additional equity investment, we can build on a solid platform to accelerate our growth ambitions. The framework of this partnership is clear: KAEFER will remain an independent company while possible synergies will be explored in the areas of know-how and expertise sharing as well as learning from best practices.

**Roland Gärber & Steen Hansen:**

Everything that has happened since the pandemic has shown us once again how deeply rooted our values are and how important it is that we can identify with them. Even though some major new build projects have been delayed as expected, the maintenance business has developed so well that we are very positive about the future. And together with SMS/Altor we will even be able to pursue additional possibilities.

We'd like to take this opportunity to thank each and every one of you for all of your efforts and hard work, under the toughest of circumstances. We are hopeful and optimistic that the coming months will be better for us, for our families and friends and for our clients and projects all over the world.

**We're one KAEFER team and together, we'll continue our success!**

## Message from the Shareholders

# Working our way forward

Dear fellow KAEFER family members, let me start by thanking each and every one of you on behalf of the KAEFER shareholders for the effort and dedication you have shown in the recent past. What started off as a brief lockdown to 'flatten the curve' has turned into 21 months like we have never experienced before.

It's been a challenging period and sadly, several of you have become ill and some of your colleagues and loved ones have even passed away. Our most heartfelt condolences are with the families and friends at this very difficult time.

However, we have to move on and face today's challenges as we are confident that these will come and go like the other challenges we have faced before. I am certain that our dedication to continuous improvement and our commitment to being the most reliable and efficient provider of technical industrial services will help us create a future that is even more stable and sustainable than before. Let me explain to you why.

For several years now, we have built upon LEAN and DIGITAL to create a common foundation for a more efficient and connected future. At the same time, we have successfully achieved our group targets in terms of health & safety again this year, with exemplary Lost Time Injury Frequency Rates (LTIF) and Total Recordable Case Frequency (TRCF), even during a pandemic. That bodes well for the future and is another example of how we continuously improve, day in, day out.

But HOW we work is as important as WHAT we work on. That's why we have renewed our commitment to improving all aspects of environmental, social and governance (ESG) at KAEFER. This goal has already been underpinned by countless initiatives that we can already be proud of now and which will also be a source of pride in the future.



Moritz Koch, Chairman of the KAEFER Advisory Board and Spokesman for the KAEFER Shareholders

Building upon this ever-increasing sustainable foundation, the KAEFER family shareholders have recently taken a big step forward in setting up a new equity partnership with SMS group and Altor, who also focus on ESG compliance. With this move, we have reached another key milestone for KAEFER in shaping our future and opening a new chapter of our company history. SMS and Altor have been carefully selected and are genuine partners of choice, oriented towards the long-term and family shareholders. I am certain that this partnership will further strengthen our business and will position KAEFER very favourably to play an active role in an ever more competitive market environment.

In summary, I am confident that thanks to the flexibility and tenacity all of you have shown and the commitment the shareholders have made, we will overcome today's challenges together as a family and team and build a future for KAEFER that is even stronger and more resilient than we have ever seen.

KAEFER Group

## Good values are universal

*It doesn't matter who you are or where you come from – as a multicultural family, KAEFER embraces diversity and fosters the inclusion of the widest variety of people.*

It's universally accepted that being guided by a strong set of positive values is beneficial for an organisation. We at KAEFER are no exception and we are driven by values, which we codified in 2017.



**Trust**

Inspire an environment of confidence, stability and predictability



**Modesty**

Avoid self-display, step aside and recognise the facts for what they really are



**Professionalism**

Continuous, life-long strive for mastery in a profession



**Reliability**

Reliable collaboration as a high asset; fulfil commitments and adhere with zero-tolerance to our Code of Business Conduct



**Respect**

Thoughtful and caring interaction with people in order to ensure openness and enable an open dialogue



**Result Orientation**

Assume responsibility and overachieve goals and expectations



**Colleagueship**

To serve the "whole" and to strive for the best solution; not who is right but rather what is right. To achieve a high level of collaboration for common success

## Valuing diversity

The very nature of being a global company means that we, as people, are at least as diverse as the many locations we operate in. We take pride in being different and foster a culture that embraces the many facets of diversity inherent in our workforce. That brings out the best in our people, who epitomise our values and actively live by them every day.

We work in an industry that has historically been male dominated. However, by taking active steps to change this, we are working towards correcting imbalances and building acceptance where necessary. Gender shouldn't be a barrier when considering work in an industrial environment and what better way to start changing this bias by incorporating different genders on all different levels in our company? That is one of the reasons why our colleagues in Brazil have started a campaign called PLURAL fostering diversity & inclusion. In addition to that, an internal Diversity Council has been established with four working groups (race, disabilities, generations, gender) each sponsored by an individual director.

We actively work towards involving people with disabilities in our company. KAEFER in the UK & Ireland for example has partnered with Down's Syndrome Association for England, Wales and Northern Ireland, Down's Syndrome Scotland as well as Down Syndrome Ireland to promote awareness, challenge perceptions and raise vital funds. Staff are already involved in various charity fundraising events and working towards fostering greater involvement from the sector in creating new opportunities for people with Down's syndrome. Boosting employment opportunities for people with Down's syndrome is an early focus, in addition to fundraising as part of its Christmas Giving 2020 campaign.

Other examples include working closely with Aboriginal and Torres Strait Islander peoples in Australia and Indigenous peoples in Canada by establishing partnerships and joint ventures and by signing diversity pledges.

According to Steen Hansen, Co-CEO, "The nature of KAEFER's internationality makes us diverse.

We are very proud of the many nationalities and cultures that enrich us, and we take active steps to foster and celebrate that. There is still a lot of work to be done, however, such as in gender representation as well as the integration of people with both visible and invisible disabilities into our workforce. It's about being more open about the various forms diversity can take and increasing the representation of under-represented groups wherever possible."

## Showing appreciation

Feeling valued by others and by the company is just as important as living by the values we set for ourselves. That's why the coming year will see various award schemes to showcase how different people interpret our values and integrate them into their personal and working lives. In the spirit of continuous improvement, we'll continue to take the necessary steps to make working at KAEFER even better and appreciating that we're all very different and that these differences unite us in one special team – the KAEFER Team.



## Health & Safety Update

# Holistically health and safe

*There are many ways to look at health and safety. All are important, especially the clothes you wear to work every day.*

The concept of health, safety and wellbeing at work has come a long way. What might have been acceptable several decades ago is no longer the case and a continuously developing awareness of the various risks faced at work has led to work being safer than ever before. But that doesn't mean we can let our guard down. It's imperative to continue working towards minimising threats to health and safety at work, regardless of whether they are physical or psychological.

### Major progress is made progressively

Excellent Lost Time Injury Frequency Rate (LTIF) and Total Recordable Case Frequency (TRCF) figures are proof that work towards creating a safety culture at KAEFER are paying off. In fact, it can be said that a safety culture is now a permanent fixture of the KAEFER company culture. The challenge is keeping up the momentum when such a high level is reached. In the spirit of continuous improvement, we can all make a difference in keeping our working environment safe and keeping ourselves healthy, which is all part of the safety culture at KAEFER.

### Keeping mental health in mind

Health is not just about reducing physical accidents and incidents. Our mental wellbeing is just as important. As this issue gains more traction in our minds, in the media and in our working environments, it's important to foster dialogue within KAEFER and to support initiatives that are good for everyone in the company.

At KAEFER in the UK & Ireland, for example, so-called 'Mental Health First Aiders' have been introduced, who act as a first point of contact for employees that may be struggling. This initiative has been so well received by staff that it was shared as Best Practice across KAEFER in Europe and beyond. In May 2021 a series of mental health 'train the trainer' sessions took place and further initiatives were started in other countries. All of these workshops and the associated training materials are tailored to the cultural sensitivities of various markets, providing for the highest levels of inclusivity.

All in all, these measures raise awareness of the impact mental health has and contribute towards a culture of openness and dialogue about issues that have often not been given the attention they deserve.



## Creating a new thread

It's universally accepted that what we wear at work plays a major role in keeping us safe. That's exactly why Health and Safety and Corporate Supply Management have been working in concert to standardise work clothing, focussing initially on all KAEFER entities in Europe. At the moment, every country uses different suppliers, and all work clothing needs to be independently certified. This costs both time and money. The idea was to find a single supplier to make the most of bulk buying opportunities and provide for high quality work wear for all of Europe.

After an exhaustive search, taking a wide variety of criteria into account, the teams found the right supplier and are now working together closely to roll out the new outfits throughout Europe. These are based on workwear used in Poland and comprehensive tests were completed in October 2021. Impressions so far are favourable and good progress is being made.



Michael Sturm  
Head of Corporate Health, Safety &  
Environment

## Introducing our new Head of CHSE

These are some of the many aspects of health and safety that play a major role in providing for the wellbeing of the entire KAEFER workforce. It's all in a day's work for KAEFER's new Head of Corporate Health, Safety & Environment Michael Sturm. He has held leading positions at Lafarge Roofing, E.ON and Eurovia and has degrees in Safety Engineering as well as Industrial Risk Management. At KAEFER, he will be continuing to focus on the company's safety culture and proactively fostering a holistic approach to our occupational health, safety, wellbeing as well as the environment.

Belgium, the Netherlands and Luxembourg

## Knock, knock...

*How do you make yourself attractive for new business in a mature marketplace where suppliers rarely change and only compete on price? You find ways to make yourself much more desirable.*

Sometimes, no amount of modern technology beats the human touch. This is especially true when it comes to drumming up new business, even if it's in a technological field. That's exactly what KAEFER in Benelux (Belgium, the Netherlands, Luxembourg) has been doing, with Commercial Manager Matthijs van der Veen and Business Unit Manager Eddie de Veen "knocking on doors" throughout the region armed with transparency and the offer of a trusting mutual relationship.

### Opening the door to organic growth

KAEFER's strategic goal in Benelux for the last 10 years was to grow from a position of strength in the southern part of the region to cover the entire geographical area. This would be achieved by first winning contracts in places where KAEFER wasn't established and to then open a permanent location there.

One recent success was a four-year maintenance contract for NAM Shell, which included all of the company's gas plants in the Netherlands. This involved many conversations between business unit managers, engineering and calculation departments, health and safety and, of course, Matthijs van der Veen and Eddie de Veen. The decision to go with KAEFER was based on the fact that as opposed to some much larger corporate competitors, KAEFER could make decisions and take action more quickly. Being a smaller, locally managed company makes KAEFER agile and also allows for a great deal of transparency. As Matthijs van der Veen, recounts, "NAM Shell was ready for a change and KAEFER was at the right place at the right time to establish an open and trusting relationship."



## Transparency is the way in

At the Sloecentrale gas-fired power plant in Ritthem in the Netherlands, KAEFER took on a variety of small jobs to get to know the client and the operation. This allowed the team to take a pro-active approach when it came to pitching for the maintenance contract for the facility. They knew the client well and were able to provide them with solutions to the challenges they knew they were facing. One prime example was DPMS – KAEFER’s Order to Invoice Solution. “Clients have the same need for transparency as we do,” says Matthijs van der Veen. “DPMS as an ‘Order to Invoice’ solution is the answer, since it offers real-time data and real opportunities for efficiency.

For clients, scaffolding is a black box: a huge construction with a price tag that is built and then dismantled, it’s not transparent at all. With DPMS we can easily display the material used, the units needed, and people involved at the click of a button.” Since maintenance contracts rarely change and there is usually not much difference between suppliers apart from prices, having a tool such as DPMS is a real unique selling proposition in the market. The team in Benelux knows the advantages well, having set up their own MS Access database for scaffolding six years ago. Now with DPMS, they are setting standards in project management across the region.

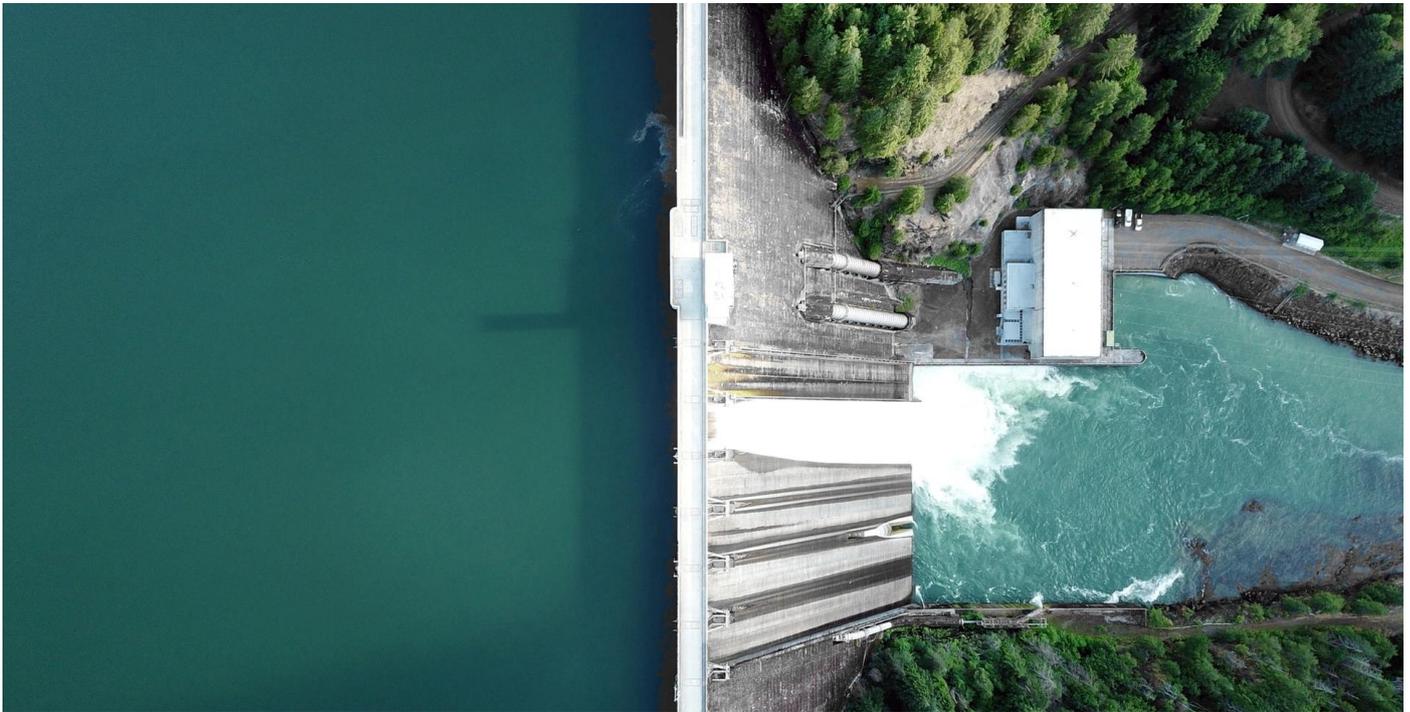
## Saying ‘I do’

No matter how good your product and service, you need to get people to know about it and commit to establishing a relationship with you. According to KAEFER’s Managing Director in Benelux Chris Hunter, “it’s all about the long-term relationship approach with people in general and with clients as well. Trust comes from staying modest and letting our actions speak louder than words. It’s like getting married. You don’t get married every year if you understand each other’s needs and everything just works. That’s the level of commitment we aim for and helping to achieve a client’s goals is just as important as achieving ours.”

Relationships are just as important within the company as they are with clients. Eddie de Veen and Matthijs van der Veen function together like a well-oiled machine. De Veen knows the market, the people on the sites and just about everyone else around. Van der Veen takes those insights and turns them into tailor-made solutions that genuinely offer clients what they are looking for. It’s easier knocking on doors together and when there’s an opening, transparency, trust and tools such as DPMS are a good start to a great relationship.

Brazil

## Harnessing the power of the planet



*Brazil is famous for its tropical climate and its mighty rivers. Both ideal for creating renewable energy and supporting the energy transition.*

RIP stands for Refractory, Insulation and Painting. But RIP Serviços Industriais, the KAEFER company based in Brazil, does much more than that. From offshore to civil engineering, facilities and now, most recently, energy, the portfolio of industries the company is serving is vast.

### **Putting natural energy to good use**

Bruno de Carvalho Andreuci Torres, Commercial Manager at RIP, is a man with a great deal of passion, not to mention energy. That's why it should come as no surprise that he works in the area of hydroelectric powerplants and electricity substations. This is a segment that has shown considerable growth for the company recently, following the acquisition of a company with a great deal of experience in the field a few years ago. Now, RIP works with clients that handle 11 gigawatts, which is around 10% of Brazil's entire energy production capacity. "Brazil has a wide energy matrix," says Bruno Torres. "It ranges from wind and solar to hydroelectric and this is an area in which we are particularly active. Our focus is on renewables, because this is the fuel of the future. We are very passionate about making the most out of the natural resources available in Brazil and my work in hydroelectric power and renewable energy contributes towards that."

### **Brazil's rivers run deep**

Hydroelectric power accounts for over 60% of the country's energy supply. RIP is very active in this area, such as with the work done for the preventive maintenance of UHE Santo Antonio Energia in Porto Velho. This involves electromechanical procedures as well as light and heavy logistics management at the hydroelectric dam. Then there are other projects such as UHE Jirau, where RIP is working on maintenance, improvements and repairs to auxiliary mechanical and hydro-mechanical systems and assistance in cargo handling activities and cofferdam panels. In total there are currently more than eight major projects at hydroelectric facilities in Brazil.



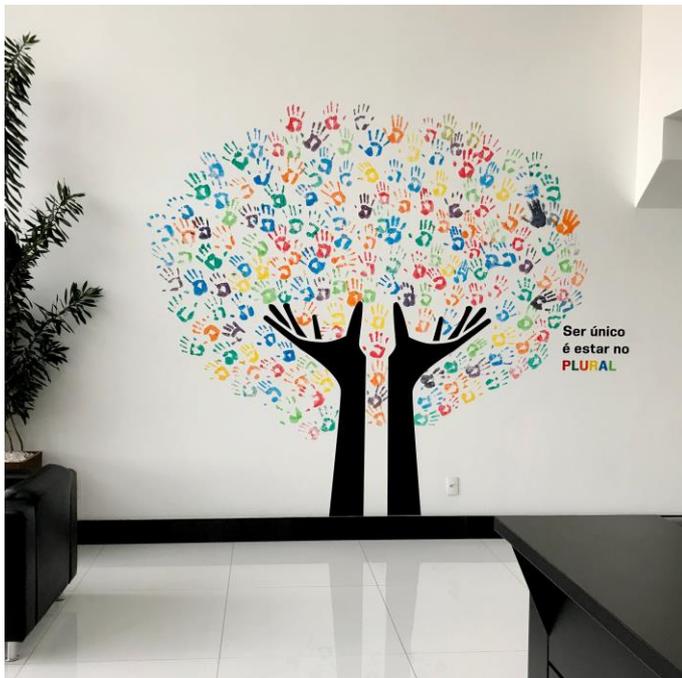
## Looking on the sunny side

Brazil's climate is also particularly well suited to taking advantage of one of the other elements the country has become known for: the sun. One current, large-scale project is for mining giant Vale, who is constructing a huge, 776MWp (potency) solar energy plant to power its mining operations near Jaiba City in Minas Gerais state. RIP is working for Hitachi Energy to build two large energy substations (230kV) for the plant, in addition to performing all of the electrical services. The project will be completed around October of next year and is a milestone for Vale's commitment to renewable energy.

Brazil has a great deal of resources that can make a difference in the coming energy transition. RIP is contributing to positive change with its expertise in renewables and forging the path for the energy of the future.

## Making an impact on people as well as the planet

RIP is contributing towards positive change not just with its work in renewable energy, but also with initiatives such as Plural, which celebrate the company's multiculturalism and diversity. "Here, people are allowed to be who they are," Bruno Torres comments. "We are all people of the earth and need to show respect to the wide variety of cultures and ways of thinking being a citizen of the world brings with it. Everyone is different, but initiatives such as Plural which foster diversity help us to do a good job together." Embracing this diversity of the people and energy of Brazil is sure to be a good recipe for future success.



## Canada

# In it for the long run

*Trust and mutual respect go a long way in Western Canada, where KAEFER is working together with Indigenous communities to build strong foundations for a sustainable future.*



Transformational change doesn't happen overnight. It takes long-term thinking, as well as a genuine desire to make a difference. That's exactly what KAEFER's Indigenous commitment in Canada is built upon. It involves not just working together with Indigenous communities, but also fostering their development by building meaningful and mutually beneficial relationships.

To turn these commitments into action, KAEFER in Canada has established a Joint Venture (JV) with the Kitsumkalum First Nation in British Columbia, Canada. The Kitsumkalum are the people of the Robin, an original tribe of the Tsimshian Nation. Established in April 2021, the JV is an agreement between KAEFER in Canada and the Kitsumkalum Development Limited Partnership and is designed to maximise the Kitsumkalum's participation in projects within their traditional territory. The Kitsumkalum territory can be found just north of Kitimat, home to LNG Canada, a major liquefied natural gas (LNG) project currently under construction. As the facility is in the traditional territory of the Haisla Nation, LNG Canada has made a series of commitments and actively seeks the support and consultation of the surrounding communities, including the Kitsumkalum.

Both KAEFER and the Kitsumkalum profit from the Joint Venture and bid on projects together. For

example, the LNG Canada project required support from the local community, including Indigenous businesses. The JV allowed KAEFER to demonstrate its local content and greatly improve its chances of winning projects. The Kitsumkalum benefit as the JV is a revenue sharing agreement, in addition to commitments to maximise business, employment & training opportunities for Kitsumkalum members and businesses.

### **Starting with a small step forward**

In Kitimat, at the LNG Canada Project, KAEFER has been awarded a blasting, welding and painting contract by Clough LNG. It's a valuable first step in the partnership between KAEFER and the Kitsumkalum. "Relationships we build today, help determine our collective wellbeing tomorrow," says Mike Lynch, Director HSEQ, Indigenous Liaison Coordinator and Project Manager. "This opportunity means KAEFER Kitsumkalum JV gets to play one small part in the transformative change that will help Indigenous people increasingly live in strong and healthy communities." The best joint ventures are the ones in which all parties can benefit from the arrangement and this is the case here. And as KAEFER continues its activities in the region and pitches for other jobs at the multibillion-dollar LNG Canada project, opportunities are sure to increase.

Rafael Machado, CEO of KAEFER in Canada comments: "We are thrilled to formalise this long-term strategic commitment with the Kitsumkalum community and are looking forward to the future opportunities where we can work together on projects."

### **Strong bonds strengthen communities**

The connection between KAEFER and the Kitsumkalum goes beyond geography and business collaboration. The Kitsumkalum First Nation places a strong emphasis on the values of trust and mutual respect, which is very much aligned with KAEFER's stated values as well. As an organisation, KAEFER prides itself as much for its contributions to industrial as well as social and intercultural improvement. By strengthening ties with the Kitsumkalum community, KAEFER can play an active part in bringing these values and commitments to life and in making a long-term difference to community well-being of the people in this beautiful part of the world.

## Global KAEFER projects 2021

*All around the world, we work on projects that matter to our clients as much as they do to us and our colleagues. We take pride in our work and the fact that we're known for being the company you can rely on when a project really counts.*



### **Australia**

Project: Olympic Dam Clarifier No. 2 Refurbishment

Owner: BHP Group Ltd.

Executing Company: KAEFER Integrated Services Ltd.

Services Executed: Electromechanical, Scaffolding, Surface Protection

Employees on site: 60

The team of KAEFER in Australia has been demonstrating the ability to deliver large-scale, multidisciplinary projects involving mechanical and electrical works.



### **Belgium**

Project: Framework agreement scaffolding Exxon Antwerp

Owner: ExxonMobil

Executing Company: KAEFER België NV

Services Executed: Scaffolding

Employees on site: 60

KAEFER has won the 5-year maintenance contract for scaffolding work at the Antwerp refinery site in Belgium. The team is the only scaffolding contractor on the entire site and is very proud of the trust placed in them by ExxonMobil Petroleum & Chemical BV - better known as Esso Refinery Antwerp.





## Bahrain

Project: Bahrain LNG Import Terminal Project  
Owner: Bahrain LNG  
Client: GS Engineering & Construction Corp.  
Executing Company: KAEFER Bahrain Securities WLL  
Services Executed: Insulation, Passive Fire Protection  
Man-hours: 196,860

The Bahrain LNG import terminal comprises a floating storage unit, an offshore LNG receiving jetty and breakwater, an adjacent regasification platform, subsea gas pipelines from the platform to shore, an onshore gas receiving facility, and an onshore nitrogen production facility. It was a premiere for KAEFER in Bahrain to execute its key services on an offshore platform during its construction phase. The team performed intumescent fireproofing of the main LNG pipe rack structures as well as insulation activities of lines of trestle and loading areas, including cryogenic insulation.



## Brazil

Project: Treatment Water System  
Owner: LD Celulose  
Executing Company: RIP Serviços Industriais Ltda  
Services Executed: Electromechanical assembly  
Man-hours: 648,000

RIP is part of 8,000 professionals working daily in this greenfield dissolving wood pulp plant (one of the biggest dissolving wood pulp plants in the world). RIP is responsible for the electromechanical assembly water system. The goal is to put it into operation at the beginning of 2022.



## Canada

Project: Foster Creek North Package 1 Insulation  
Owner: Cenovus Energy Inc.  
Executing Company: KAEFER Integrated Services Ltd.  
Services Executed: Insulation  
Man-hours: 31,000

KAEFER in Canada is continuing to strengthen its relationship with a major client in the region, especially with recent mergers mainly between Cenovus Energy and Husky Energy. With the award of this project, it is going on four years of continuous work across two sites (Christina Lake and Foster Creek).

From a technical standpoint, this will be the first time KAEFER in Canada is installing this style of system (Armigel HT, PS-960, V-Groove) to increase thermal efficiency and CUI mitigation.



## Finland

Project: 'Costa Toscana' Sun Deck  
Owner: Costa Cruises  
Executing Company: KAEFER Oy  
Services Executed: Turnkey delivery of exterior areas  
Man-hours: 50,000

Costa Cruises is launching a brand-new ship: Costa Toscana. KAEFER in Finland was responsible for the turnkey delivery of exterior areas on deck 18 at Costa's new flagship.



## France

Project: Boréal large unit shutdown 2021  
Owner: Boréal  
Executing Companies: KAEFER WANNER SAS, KAEFER UAB, KAEFER S.A.  
Services Executed: Asbestos Removal, Insulation, Scaffolding  
Employees on site: 100

KAEFER WANNER is executing inspection and maintenance works on all the units on the site (furnace, boiler column, cold storage area, sphere, etc.) together with colleagues from KAEFER in Lithuania and Poland.



## Germany - Construction

Project: Revitalisation of office and commercial building  
Owner: Joachims-Carree GmbH  
Executing Company: KAEFER Construction GmbH  
Services Executed: Interior Outfitting  
Man-hours: 70,100

The location in the city center of Hanover and the corresponding demanding logistics made this project a true challenge. Being responsible for complex interior outfitting including drywalls, ceilings, doors, insulation and steel girder cladding, KAEFER Construction finished project works in August 2021. The team was able to win a new customer with this convincing performance.





## Germany - Industry

Project: Leuna "ProTurn2020+"

Owner: TOTAL Raffinerie Mitteldeutschland GmbH, Leuna

Executing Company: KAEFER Montage GmbH (location Leipzig)

Services Executed: Heat, Cold and Acoustic Insulation

Man-hours: 40,000

Insulation services in the POX methanol plant were part of the most complex plant shutdown at TOTAL refinery in Leuna. KAEFER in Germany has been executing dismantling, reassembly and new assembly of heat, cold and acoustic insulation as part of the turnaround and further projects.



## Germany - Shipbuilding

Project: 'MY Vega'

Client: Dörries Yacht GmbH

Executing Company: KAEFER Schiffsausbau GmbH

Services Executed: Insulation, Interior Outfitting

Man-hours: 20,000

The conversion of a 55-year-old English icebreaker to a yacht isn't our typical project - but an exciting one for sure.

KAEFER in Germany performed insulation on the steel hull and aluminum superstructure. Furthermore, the team was responsible for engineering, fabrication and installation of the galley, crew cabins and guest cabin.



## Ireland

Project: Bellanaboy Bridge gas terminal

Owner: Vermilion Energy

Executing Company: KAEFER Ltd. (Mayo based onshore teams)

Services Executed: Engineering, procurement and construction management (EPCM) services

KAEFER has been able to secure a contract extension to deliver engineering, procurement and construction management (EPCM) services for Vermilion's onshore Corrib Gas plant. Gas is transported from the Corrib gas field off the Irish northwest coast to the Bellanaboy Bridge gas plant through 90km of pipeline where it is then processed prior to being delivered to the national grid. The agreement will run for two additional years to 2023. The work will be delivered by KAEFER's Ireland - Mayo based onshore teams, with support from the KAEFER Ireland business.



## Kuwait

Project: KOC Feed Pipelines for New Refinery Project

Owner: Kuwait Oil Company (KOC)

Executing Company: KAEFER Saudi Arabia

Services Executed: Thermal Insulation

Man-hours: 245,000

The project scope comprised of in-situ field joint insulation with PUF injection method for pipelines of 30-inch-diameter, approximately 100 km in length from various KOC South Tank Farm manifolds to the new Al Zour refinery. The project also included the scope of cathodic protection work.



## Luxembourg

Project: TYVEK L8

Owner: DuPont de Nemours

Executing Company: KAEFER Luxembourg S.à.r.L.

Services Executed: Insulation, Passive Fire Protection, Scaffolding

Man-hours: 40,000

The works at TYVEK L8 represent the biggest industrial project for KAEFER in Luxembourg for the past 20 years.

Starting with scaffolding only, the project evolved now including insulation as well as passive fire protection. This exciting, long-term project running for four years is a great example of the efficient and reliable services KAEFER is offering.



## Malaysia

Project: Melaka Refinery Diesel Euro 5 project

Client: Hyundai Engineering Malaysia Sdn Bhd.

Executing Company: KAEFER (Malaysia) Sdn Bhd.

Services Executed: Insulation, Scaffolding

Man-hours: 203,500

The KAEFER team in Malaysia applied LEAN in the Melaka refinery project in the scaffolding warehouse and with a LEAN fabrication yard. While the project scope increased by more than ten per cent during the works, the result was an efficient and safe project execution - and a happy client.



## Netherlands

Project: Zeeland Refinery Turnaround 2020/2021

Owner: Total, Lukoil

Executing Company: KAEFER Nederland B.V.

Services Executed: Asbestos Removal, Insulation, Scaffolding

Man-hours: 130,000

During a year with COVID-19, the large, plant-wide turnaround continued. This caused for an adjusted execution in terms of Health & Safety regulations with the same pre-COVID scope of more than 150,000 m<sup>3</sup> of scaffolding as well as insulation and asbestos removal services were achieved by a dedicated and motivated team.



## Norway

Project: Martin Linge Hook-up

Owner: Equinor

Client: Rosenberg Worley

Executing Company: KAEFER Energy

Services Executed: Services Executed: Engineering, HVAC, Insulation, Interior outfitting, Passive Fire Protection, Rope Access, Scaffolding, Surface Protection

Man-hours: 2.3 million

The North Sea Martin Linge field is located 42 kilometres west of Oseberg. Equinor became the operator of the Martin Linge field in 2018 and installed four large modules. KAEFER Energy is performing numerous services for the platform to a greater extent than planned originally both in volume and time.



## Oman

Project: Duqm Refinery EPC1

Owner: Duqm Refinery and Petrochemical Industries Company (DRPIC)

Executing Company: KAEFER Insulation LLC

Services Executed: Fireproofing, Insulation, Mechanical Works, Refractory, Scaffolding

Employees on site: 150

This is the largest project of its kind for KAEFER in Oman. The team is executing insulation, mechanical services, refractory, scaffolding as well as passive fire protection in the refinery located in the Duqm Economic Zone.



## Poland

Project: Olefin Plant II

Owner: Polski KONCER NAFTOWY ORLEN S.A.

Executing Company: KAEFER S.A.

Services Executed: Insulation

Employees on site: 150

The Olefins II installation at PKN Orlen in Plock, which produces ethylene and propylene, is one of the largest production complexes of its kind in Europe. From April to June 2021, there was a huge project on the premises, including the dismantling of insulation, anti-corrosion work and reassembly of insulation carried out. The team of KAEFER in Poland installed 8,000 m<sup>2</sup> of cold insulation using poured polyurethane technology and 10,000 m<sup>2</sup> of heat insulation using mineral wool technology, all within 3 weeks.



## Qatar

Project: Qatar Gas - Service & Maintenance Works

Owner: Qatar Gas

Executing Company: KAEFER LLC

Services Executed: Insulation, Refractory, Surface Protection, Passive Fire Protection

Employees on site: 350

The annual maintenance contract at Qatar Gas is the biggest of its type for KAEFER in Qatar, further consolidating its presence in Qatar.



## Saudi Arabia

Project: T&I, Sea Island 4

Owner: ARAMCO

Executing Company: KAEFER Saudi Arabia

Services Executed: Painting, Scaffolding

Man-hours: 305,000

This is the first offshore turnaround performed by KAEFER in Saudi Arabia. Works started in September 2020 with an expected completion in December 2021.



## South Africa

Project: Eskom Power Station Tutuka

Owner: Eskom

Executing Company: KAEFER Thermal Contracting Services (PTY) LTD.

Services Executed: Scaffolding, Removal of Insulation

Man-hours without LTI: 5,517,976

Tutuka is the Zulu word for progress. Since its completion in 1996, the Tutuka power station is feeding energy into Eskom's 765 kV extra high voltage system. The six boiler/turbine unit giant contributes 3,600 MW supplied to consumers and industries throughout the country. KAEFER in South Africa is delivering supply, erection & dismantling of scaffolding including removal & replacement of insulation materials based on defects and scopes provided by Eskom within its maintenance and outage contract.





## Spain

Project: DOW North Chemical Facilities Shutdown (Tarragona)

Owner: DOW Chemical

Executing Company: KAEFER Servicios Industriales SAU

Services Executed: Access, Insulation, Passive Fire Protection, Surface Protection and Confined Spaces Preparation

Man-hours: 250,000

KAEFER in Spain installed more than 170.000 m<sup>3</sup> of scaffolding and demolished and installed 11.000 m<sup>2</sup> new insulation (mineral wool works, polyurethane, foam glass, mattresses, aluminum sheet and stainless steel). Additionally, 650m<sup>2</sup> of surface protection were executed (surface preparation through dry jet and modified silicone application).



## Sweden

Project: Säffle ackumulator tank

Client: Värmevärden Säffle AB

Executing Company: KAEFER AB

Services Executed: Insulation, Scaffolding

Man-hours: 2,700

A state-of-the-art and flexible district heating plant in Säffle will ensure sustainable district heating for the municipality in the coming decades. The new heating plant is expected to be commissioned in December 2021. This exciting project is on show as it is located near a large motorway. KAEFER in Sweden has been performing 4,500m<sup>2</sup> of insulation and 2,600m<sup>3</sup> of scaffolding.



## Thailand

Project: Dogger Bank Wind Farm Project - Dogger Bank A & B

Owner: SSE Renewables and Equinor consortium

Executing Company: KAEFER Engineering (Thailand) Ltd

Services Executed: Architectural Works, Insulation

Man-hours: 86,100

After successfully carrying out interior outfitting for Equinor's Johan Sverdrup platform on Aibel's yard in Thailand last year, Aibel awarded KAEFER with another project. At Dogger Bank A, KAEFER performed architectural and insulation works. During work on module A, Aibel awarded KAEFER in Thailand with another module (B). More modules are expected for the future.



## United Arab Emirates

Project: Maintenance Services

Owner: ADNOC Refining

Executing Company: KAEFER LLC

Services Executed: Insulation, Painting, Scaffolding

Man-hours: 1,990,560

This maintenance contract was awarded by the ADNOC Group through its optimised procurement strategy in which all of the maintenance contracts (for our scope of works) were awarded through a single platform. The services executed by KAEFER in UAE include scaffolding, insulation, and painting with a contract duration of 4 years with an optional extension. This project strengthens KAEFER's presence in the maintenance market in the region. DPMS - KAEFER's Order to Invoice Solution - has been implemented successfully in the project, allowing efficient and transparent processes.



## United Kingdom

Project: Phillips 66 Humber refinery

Owner: Phillips 66

Executing Company: KAEFER Ltd.

Services Executed: Access, Asbestos Removal

Man-hours: 300,000 per annum

KAEFER in the UK are sole access supplier for maintenance, projects and turnarounds for P66 on the Humberbank. Thousands of scaffolds are built annually using a variety of Tube & Fitting and LAYHER system scaffolding. P66 are one of the largest regional employers and a key client within the KAEFER portfolio in the United Kingdom.



## Vietnam

Project: LSP Complex Pkg. A2 Spherical Tank

Owner: SCG

Executing Company: KAEFER Engineering (Vietnam) Ltd

Services Executed: Cold Insulation

Man-hours: 62,700

This project was the first spherical tank project for KAEFER in Vietnam. Due to our expertise in cold insulation, Boiler Master awarded this job to KAEFER. The team completed and delivered the 1st tank successfully.

Germany - Shipbuilding

## Making dreams reality

*Making a yacht takes skill, dedication and passion. Plus, a healthy dose of glass fibre-reinforced plastic (GRP). Find out how the KAEFER Shipbuilding team goes about creating the stuff of dreams.*

Most people wouldn't associate GRP with exclusive yachts. These floating palaces tend to evoke images of fine wood, luxurious leather and sculpted metal. Yet KAEFER Schiffsausbau's in-house Plastics Workshop (Kunststoffwerkstatt – KSW) in Germany uses synthetic materials to allow yacht designers the freedom to make ever more elaborate and emotional creations. On top of that, the materials created in the workshop for use on the world's most exclusive vessels is high-performance, high technology and designed to withstand even the most extreme environments.

### Working in-house simply works

Back in 2003, KAEFER received its first commission to do interior outfitting on a yacht. The team around Holger Simon (who has now retired) was considering how best to approach creating the exterior decks and exterior ceiling cladding and decided to do it all in house, rather than having to rely on sub-contractors. "We started with aluminium honeycombs, which were filled and troweled", Holger Simon recounts. "Over the years we arrived at our current plug-in ceiling cladding system, which is patented, and also available as a click system, offering designers even greater variety in terms of what they can create." The team, now led by Ansgar Lübbers, then got thinking about what more they could do and decided to try their hands at exterior furnishings.

It is all created in-house, from construction and assembly to painting and finishing. At KSW alone, there are carpenters, boat builders, painters and plastics mechanics – all specialists in their fields and all able to provide the highest levels of quality and expertise.



For example, outer decks are measured directly at the shipyard by the KSW team using an electronic 3D measurement system. It works by directing a laser on to a prism with the beam running along the outer edge of the yacht. The tracking of the laser beam is then converted into digital points and the designer uses them to define the contour of the outer skin of the vessel.

When it comes to exterior furnishings, these need to withstand extreme conditions, such as UV radiation, saltwater and temperatures from sub-zero to +40 degrees. That's why all KAEFER exterior furnishing is sent to a dedicated climate chamber for tempering. This is to ensure that there is no reaction later, which is the big difference to yacht interiors, where there are constant temperatures and a more forgiving environment.

All the work is done by one group of passionate professionals, from construction and fitting to painting and finishing. "I think it is important that KAEFER's own, in-house production secures know-how within the company and also generates economic output within KAEFER," says KAEFER Schiffsausbau Managing Director Jürgen Trost. "It is fantastic to witness KSW's development over the last few years and to see how proud our employees are of their products."





## Promoting both inner and outer beauty

Traditionally, owners and commissioners of yachts tended to focus on interiors when it came to making their sea-faring dreams reality. Nowadays, there is increasing emphasis on exteriors, with more extravagant decks and more individual furnishings and fittings. On top of that, the materials used for exterior furniture is also becoming much more varied. One example is artificial wood, which is used in cases where the desired design is impossible to make using real wood. Artificial surfaces are created, such as imitation oak, teak and mahogany, which are painted by hand by an artist.

KAEFER's KSW is a team of craftspeople dedicated to the details that matter when it comes to luxury vessels. There is, of course, a desire to grow and to develop new technology and methods to continuously improve what can be offered to clients, regardless of whether that's designers, builders or owners. In the end, though, a yacht is an expression of an individual's personality and is a very emotional purchase. That's exactly why the team at KAEFER's KSW will go to great lengths to make dreams reality. Even if it sometimes involves suspending disbelief when it comes to the materials used.



*Electronic 3D measurement*

UK & Ireland

## A mutual show of strength

*To be constantly ready for the most challenging missions at a moment's notice, ships, submarines and other vessels in the Royal Navy need to be perfectly maintained. KAEFER is at their service.*

Collaboration and partnership are key to maintaining a good business relationship. That also goes a long way when it comes to maintaining and supporting Royal Navy ships and submarines. KAEFER in the UK have strengthened their strategic relationship with Babcock, securing a framework agreement to deliver industrial services at the Devonport and Clyde shipyards.



### Assuring the competitiveness of UK shipbuilding

KAEFER's team in the UK has been working together with Babcock for over 20 years and have strategic supplier status. Both companies collaborate to achieve the same goal: to assure the global competitiveness of UK shipbuilding for the long term. In the process, KAEFER focusses on applying LEAN principles to all operations, embracing innovation, delivering value plan savings across the board, bringing resilience to the business as well as ensuring certainty of delivery. In addition to that, the industrial services contract will sustain over 700 KAEFER jobs in the UK.

Chris Foulkes, CEO for KAEFER in the UK & Ireland said "we have only been able to secure this framework and long-term employment for our UK workforce, due to their ongoing and long-term exceptional performance. Operations Excellence is part of our DNA at KAEFER, and continuous improvement is critical in demonstrating value for work in support of Babcock's maintenance business for the Ministry of Defence."

From surface protection, scaffolding and access to first attack firefighting, rigging, cleaning, security and general site services for new build projects, the KAEFER team at Babcock is responsible for the performance and upkeep of the pride of the UK's naval forces. They don't take the privilege lightly and look forward to several more years of collaboration and partnership.

## Australia

# Maintenance matters

*Business has been strong in Australia, driven by the increasing demand for minerals and precious metals such as iron ore, lithium, copper, nickel and gold.*

As demand for precious metals and minerals grows, so does the need for the assets to extract them. This involves new operations as well as the rejuvenation and ongoing maintenance of older assets. These are both areas in which KAEFER in Australia has seen substantial growth in the last year.

### **Picking up from shutting down**

To keep both new and older facilities performing at their best, they need to be maintained. This often involves plant shutdowns, an area that KAEFER has focussed on. Across the oil and gas and industrial infrastructure sectors, KAEFER in Australia has won numerous contracts, such as BHP Olympic Dam, the Smelter Campaign Maintenance 2021 (SCM21) Shutdown and the Clarifier No. 2 Refurbishment Project. On top of that, KAEFER in Australia's maintenance and asset integrity strategy has delivered across Rio Tinto assets, with major iron ore contracts as well as access solution jobs awarded for Rio Tinto's Alumina assets.

To complement the maintenance and shutdown services, the team in Australia has also won major contracts in construction as well, making the most of the interdisciplinary talent within the organisation.

According to Victor Bogos, Managing Director KAEFER Integrated Services, "In a year that has provided global challenges, the business remains confident in continuing to grow across both maintenance and shutdowns and construction, with a strong pipeline in place. The importance of focusing on safety and never compromising delivery remains critical to achieving our objectives. We continue to invest in our people and remain client driven with our model based on simplicity, essentially keeping our clients happy and producing sustained growth across our operations."



### **Digging deep for new business**

2021 saw KAEFER secure its first major mechanical maintenance services contract in the oil and gas industry which complimented other core services. At both new and existing sites, the Australian team won several planned maintenance and shutdown jobs for clients such as Santos and Chevron, ideally positioning the company for future growth and more long-term opportunities.

Poland

## Through thick and thin

*For many years, KAEFER in Poland has worked together with PKN Orlen, a Polish fuel and energy company with a leading position in Central and Eastern Europe. Throughout that time KAEFER and PKN Orlen have been through thick and thin, often working to tight deadlines and successfully overcoming obstacles together.*



The Olefins II installation at PKN Orlen in Płock, which produces ethylene and propylene, is one of the largest production complexes of its kind in Europe. From April to June 2021, there was a huge project on the premises, including the dismantling of insulation, anti-corrosion work and reassembly of insulation carried out. In this project for a timeframe of just three weeks, 150 specialists from the Płock Branch of KAEFER in Poland performed ca. 18,000 m<sup>2</sup> heat and cold insulation on plant components, pipelines, exchangers, and pumps at the installation.



PKN Orlen in Płock

### LEAN takes on a leading role

What made this project particularly distinctive was the application of LEAN. Marek Koprowicz, Director of the Płock Branch of KAEFER explains: "We performed the cold insulation during the prefabrication stage in intermediate storage areas located outside the Olefins plant. Adopting the LEAN approach significantly sped up the insulation installation process on site." The project was a huge logistical, organisational and technical challenge given the very short execution time. An additional difficulty was the presence of other contractors' teams at the worksite. "We used the standard technology required on the premises of PKN Orlen for cold and heat insulation," Marek Koprowicz recounts. "And we managed to complete 8,000 m<sup>2</sup> of cold insulation using poured polyurethane and 10,000 m<sup>2</sup> of heat insulation using mineral wool in just three weeks."

### A team that's ready for everything

The project has once more reinforced the mutually beneficial relationship between KAEFER and PKN Orlen. The whole team pulled out all the stops to ensure the success of the project, in particular Project Manager Michał Jankowski.

According to Vice-President of the Management Board for Operations, Mariusz Łotowski, "this project is an example of fantastic organisation, logistical flexibility and the full mobilisation of all KAEFER teams. Once again, we have proven that we are a team that's ready to carry out the most demanding projects and that we can also effectively and efficiently manage subcontractor teams."

Thailand

## The sun never sets on a worldwide collaboration

*Around the world around the clock – this insulation project spanned the entire globe and took advantage of the world of engineering expertise at KAEFER's fingertips.*



In the truest sense of the word, this was a global project. In addition to involving the cryogenic insulation of a sphere, it spanned every time zone in the world: from Australia through to Malaysia and Thailand, then to Germany and finally, the west coast of Canada. Insulating a sphere tank that spans 17.5 metres in diameter is a challenging task at the best of times. The fact that it was partially performed in Thailand, using specialist Polyisocyanurate (PIR) insulation, and then transported and completed in western Canada, made it even more complex.

### **Colleagues you can count on**

KAEFER is fortunate to have a range of talent dotted around the globe. There's the LNG Solutions Centre in Australia and the Corporate Innovation & Technical Excellence (CIE) Department in Bremen. Then there are the experts in Thailand, who are well versed in working with spherical tanks. However, this project involved working with a special material: PIR. A further development of polyurethane, PIR is typically produced as a foam and used as rigid thermal insulation. It has such a high thermal performance that it only needs half the thickness of other mineral-based insulation products. René Matthies as team member of KAEFER's Expert Group Thermal Insulation took the lead and created a working group to convey the necessary PIR knowledge and spherical tank standards to the international team. In a series of weekly calls with CIE, everyone worked together both remotely and in-person, with a regular photo series to document the work and allow for closer collaboration and the exchange of advice and best practice. This meant that the people on the ground could benefit from the skills and experience from others several thousand kilometres away and leverage all the expertise each of their colleagues had to offer.



## From tropical Thailand to cold Canada

As the sphere tank would be transported to Canada, it could not be completely insulated in Thailand. There was approximately 20% left to do in Canada prior to final commissioning. This provided serious challenges in terms of developing a bespoke cladding design, as well as coming up with solutions that would function in two very different climate environments. Working in concert, the team added additional insulation support rings at the bottom of the structure and used sacrificial layering to support the use of screws and rivets. A great deal of support was received from Jeeva Karrupiah, Operations Manager in Malaysia, in the design of these specific rings, in collaboration with the teams in Thailand and Germany. Furthermore, CIE helped with defining further engineering elements for the sphere to insure it would deliver the necessary quality and be able to withstand the climatic conditions in Canada once operational.

## Business unusual

For the team in Thailand, this was much different than the usual insulation work they performed for standard tanks or pipelines directly at customer sites. Furthermore, just like with many other KAEFER projects around the globe, the COVID-19 pandemic and its lockdowns, travel restrictions and labour limitations made this job more difficult than usual as well. However, thanks to the international sharing of know-how and expertise, the global team managed to successfully complete the project to the client's complete satisfaction. This goes to show that when it comes to working together on complex engineering projects, there are no borders, just benefits.



*Stages of insulation on spherical tanks*

## Sustainability & ESG at KAEFER

# Sustainability & ESG are there to stay

*Sustainability is worth fighting for. KAEFER is as much a citizen of this earth as the people who work for the company. That means it has the same responsibility to make sure that the world as we know it remains our world. The benefit a company like KAEFER has is that our core business is already helping to reduce the energy waste and improving the carbon footprint of our clients. But we also need to do our own homework and constantly work on our own sustainability. That is where our effort to comply with ESG criteria (Environment, Social and Governance) comes into the scene.*



Claudia Lucas

Sustainability is a democratic endeavour in which all stakeholders need to be involved. Consequently, to truly achieve sustainability goals, a wide range of voices need to be heard and properly taken into account.

That is exactly what the newly created Sustainability Working Group (SWG) at KAEFER aims to achieve. It was designed as a sparring team with members from various business units from around the KAEFER world tasked to consider sustainability and the implementation of ESG (Environment, Social, Governance) criteria from a corporate as well as an operations point of view. In the SWG, everyone has an equal say and is encouraged to call out others and foster debate. Claudia Lucas, HSE Advisor in Norway sums it up “sharing ideas and best practices between individual countries and that we can learn from each other – that’s what will drive us forward”.

## Float like a butterfly, sting like a bee

Why should it be necessary to have a working group for sustainability and ESG when we already have a dedicated department for this area (CRS)? The answer is simple. Sustainability has been on KAEFER’s agenda for a long time, but nowadays, ESG is becoming ever more important. ESG is an evaluation of a company’s collective conscientiousness for environmental, social and governance factors. Sustainability goes hand in hand with ESG and clients and investors alike apply these non-financial measurements as part of their analysis when awarding contracts and identifying growth opportunities, for example. “ESG and sustainability belong together,” explains Francisca Gorgodian, Head of Corporate Sustainability & Communication at KAEFER. “We can speak of following a sustainable strategy when we comply with the set ESG directives, when we can demonstrate that we are focusing on environmental, social and governance issues. Sustainability is becoming our license to operate. ESG criteria are helping us to follow up on our sustainability goals.”



Francisca Gorgodian

It is the task of the SWG to find answers to the current challenges and to embed even more ESG criteria into the day-to-day business. To get there, the group pursues a collaborative approach, exchanging ideas on how things can be done better at KAEFER and how metrics, policies and focus areas can be implemented

The group was created as a smaller, more agile entity that could employ a more dynamic approach to decision making. The idea is to develop possible solutions that are very targeted in addressing sustainability goals and make a real impact, in the truest sense of the term.





Erhard Dubs

## Fighting the good fight

When it comes to sustainability, most people immediately think of climate change and environmental issues. Erhard Dubs, Corporate Strategy Manager, says, “although sustainability is definitively not only about becoming greener, however there is also an increasing awareness of ambitious carbon footprint targets for instance due to the European Green Deal. We need to understand how this will impact our business and consider the strategic action we need to take now to fulfil our clients’ and the societies’ future requirements.” That is high up on the agenda for the SWG, with work being done in the areas of how LEAN can be used to reduce waste.



Axel Schulz

For Axel Schulz, Global LEAN Manager, the link to sustainability is obvious: “while supporting LEAN Projects, I have not just seen safety and efficiency improvements, but also waste reduction in CO<sub>2</sub> emissions. Definitively LEAN plus green equals less waste and our LEAN approach is further pushing sustainability on our jobsites.”

For Julia Kasperek, Project Manager Sustainability & Communication at KAEFER Headquarters, “it’s clear for all to see that our business will not only be affected by climate change, but also the social and governance challenges need to be considered. We work out in the open oceans, at the coast, far inland where it’s hot and dry. In all of these places and many more, weather and climate as well as working conditions and for instance the health & safety of our employees are fundamental and affects every aspect of what we do. It’s our duty to minimise the effects not just on the environments we work in, but on the environment as a whole.”



Julia Kasperek

Niels Gogler, Executive Assistant to Co-CEO Roland Gärber, adds: “it may well be a struggle to achieve our goals, but we simply cannot go on without challenging ourselves. We have to adopt an attitude of action and tackle sustainability head on.”



Niels Gogler



Laura Gonzales

Other areas being discussed include sustainability in the supply chain and increasing transparency about human rights and gender equality in suppliers' management, for example.

For Laura Gonzales, HSEQ Technician in Spain, the UN Sustainable Development Goals (SDGs) are also of fundamental interest: "It's great to have a group of people with whom we can discuss our local approach towards achieving the SDGs and find ways to tackle the global challenges behind those topics." This is just one of the many 'hot topics' that regularly finds its way on to the SWG's agenda, which meets every two months.

For Francisca Gorgodian, it all boils down to taking action. "We know that our behaviour has an impact on our environment and our society. There's simply no question about that. So, we need to adopt a strategy that takes all of the lessons we've learned about being sustainable, including all of the technology we've developed, and put it into use. We need to become better every day, but instead of just talking about it, we need to act consistently all over the KAEFER world and ensure that our actions and reports tackle all relevant ESG criteria in our organisation. With the SWG, that's exactly what we're trying to do."

Germany

## Like two peas in a pod

*Is LEAN something you learn or is it in your blood? For End-to-End project manager Fin Quante, it's a bit of both. And he's found the perfect fit with KAEFER.*



Fin Quante

As the popular German saying goes, every pot will find a lid that fits. This was certainly the case for Fin Quante in Germany, who found himself drawn to LEAN from very early on in his promising professional career. He now works as an End-to-End Project Manager at KAEFER, which involves leading digital projects and designing harmonised and standardised process models. However, his interest in LEAN developed while he was undertaking an internship at Schaeffler, a German manufacturer of rolling element bearings for automotive, aerospace and industrial uses, where he supported the LEAN team. He learned about the optimisation of production processes and became passionate about the concept of continuous improvement. He would also then later find an even better fit in KAEFER, but we need to tell this story from the beginning.

Fin's issue during his studies was that LEAN wasn't really something that was part of his bachelor's degree in business management. The engineering part was missing. So, he decided to change track and start a second bachelor's degree in industrial engineering, which adopts an interdisciplinary approach and incorporates both business administration and mechanical engineering, with a focus on system development and innovation management. Upon completion of the programme, graduates are entitled to use the title of industrial engineer. This was much more up Fin's alley, even though he found it very challenging. "Mathematics, mechanics and physics are not easy subjects to get into after spending time studying business management," he recounts. "But there was a spark there for me and even if it was very challenging, it was the best decision I ever made." That decision then led to an application for a master's degree and a chance encounter with KAEFER.

## **An unrelenting work ethic**

Throughout Fin's bachelor's studies, he always had a job on the side: from working with senior management at Schaeffler and a position in DHL's back office to getting involved with Active e.V. in Bremen, a student consulting company that works for real-life clients in business and industry. These experiences provided him with valuable knowledge in building competence centres like process optimisation, for example. But for his master's, Fin vowed to stay away from extracurricular work and focus entirely on his studies. He lasted exactly two months before he started looking for jobs again.

After searching through several portals, Fin only made one application. That was to be a working student at KAEFER. He got the job and started in May 2019.

## **Living LEAN**

From the moment he started at KAEFER, his mission was to be an active participant in the company's LEAN journey. His master's thesis was entitled "Data-driven continuous improvement culture enabled by digital Lean tools in the construction industry" and he worked on applying these insights in his daily work. He programmed an app to measure the amount of time wasted on construction sites by idleness. This was integrated into the DPMS – The Order to Invoice Solution app and led to a 90% reduction of wasted time as well as time savings of 1/3 for the entire process. LEAN leaders use the app for analysis and part of his research on his master's thesis has helped develop new versions of DPMS and its user interface. Throughout his studies and in his subsequent work at KAEFER, Fin has shown a commitment to LEAN as a real driver of innovation and efficiency.

## **Fitting in and finding ideas for the future**

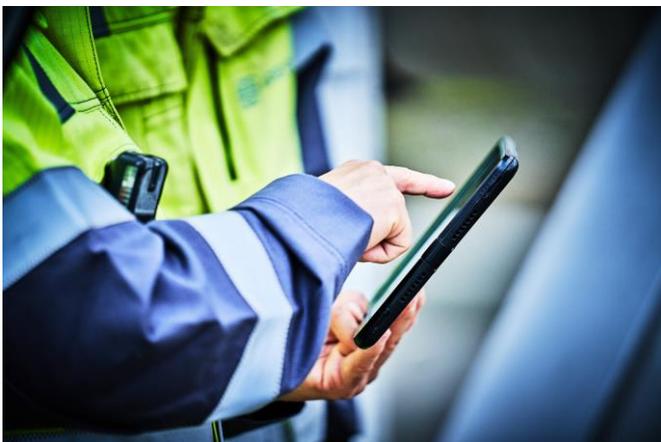
Fin likes to think about what will happen to the company culture with a shift to digitalisation and how this will affect the dynamic on the construction sites. He also wants to understand where there are opportunities for improvement in warehouse and asset management and how things such as QR codes as well as RFID can streamline processes. He also enjoys the fact that he is able to bounce these ideas off of his colleagues and learn from their experience. "I feel like I'm on the same level with others here at KAEFER," Fin explains. "There's no feeling of people throwing their weight around, it's rather a constructive and supportive environment where I'm free to make mistakes and to learn from the experience. And the fact that people greet each other with 'moin' here as well makes me feel at home."

His superiors agree that he fits right in. According to Dr. Alexander Faber, Head of Corporate Operations Excellence, "Fin is a very conscientious employee with high quality standards in his work. At the same time, he is inquisitive and wants to develop himself further. He is a wonderful fit for KAEFER and our motto: When it counts, count on us."

## Digitalisation at the KAEFER Group

### Doing digital right

*It's never been easier to connect with one another, communicate with each other, work together and find ways to improve every aspect of the way we do business. That's all thanks to digitalisation. Yet the broad nature of the term itself risks meaning everything and nothing. These are a few examples of digital success stories from around the KAEFER world showing how we do digital and how we do it well.*



#### Opening up with “Workplace”

At KAEFER Energy in Norway, the majority of operative employees don't use computers at work. But they use phones and tablets and are familiar with Facebook. That was the insight that led to using an employee app for the dissemination of targeted communication and to reach all employees with important information and news. Workplace is a business communication app that works in a similar way to Facebook. This led to greater acceptance amongst employees, a large proportion of whom are already members of the social network.

KAEFER Energy aims to further develop a strong internal culture based on trust and transparency. Workplace makes this possible by providing a medium for people from all parts of the organisation to communicate in groups or in chats in a secure way.

The pandemic has reinforced the need for regular communication and Workplace has gone a long way in giving KAEFER Energy an effective, open

and transparent way to exchange information.

#### Making processes paper-free with “Prefab Base”

Prefab Base is a customised, paper-free software solution to support the administration of all processes in prefabrication. In operation since 2019, Prefab Base provides transparency, an overview of production and full control. The solution also coordinates production and communication across borders, allowing the KAEFER team to optimise lead times and offer a streamlined process to clients, with live, detailed information on the status of production, as well as accurate pricing and production estimates.

#### Gaining new insights from the “K-POD”

The KAEFER Procurement Podcast (K-POD) is hosted by the Corporate Supply Management Department at headquarters to share interesting and exciting stories about purchasing and supply management. The topics range from current innovation in the industry, insights from internal and external experts, interviews about special activities or projects to short features on topics that have a wide overlap with other areas.

The aim is to provide interesting content that can be consumed anywhere, such as sitting on a train, while driving or when going for a walk, for example. It's also about sharing 'aha' moments with listeners to get them to think differently about the world of procurement and supply management. If it makes listeners curious or, better yet, gets them to consider changing the way they do things in their own work then K-POD has done its job. K-POD in English is available on KAEFER's Intranet ONE.



## Coming to better decisions with an analytics platform

Today there is a massive amount of data available, and it needs to be interpreted and turned into usable insights. The best decisions are the ones based on the most well-organised information. When you add digital visualisation into the mix, it makes the process even more effective and intuitive. Using business analytics service Power BI, users can create their own reports and dashboards and share these with key stakeholders in an instant. The aim is to use data more efficiently and collaboratively, making it easier for stakeholders and decision makers to quickly get to the 'what', 'how' and 'why?'

KAEFER Energy in Norway has launched the platform as first entity within the group to test its capabilities, with the intention to further rollout it to other KAEFER entities thereafter. The platform is ideally suited for extensive usage around the world within the KAEFER Group, providing technical and organisational benefits. In this way, data becomes information, which turns into insights and provides a solid basis for good decision-making.

## Harmonising and digitalising customer data with CRM

In Germany, the entire inquiry and quotation process of KAEFER Industrie was digitalised with a new Customer Relationship Management (CRM) tool. It was seamlessly integrated into SAP and the estimation software with an interface for inquiries, offers and customer information. The system works using a timeline, which allows employees to track e-mails, calls, appointments and notes throughout the course of making an offer or corresponding with a customer. There is detailed information to use as well, such as turnover from the last three years or offers open, lost and won.

This new system has created a transparent knowledge pool with insights about the behaviour and interests of our customers, which makes it easier to address the individual needs. It has made the sales process more efficient, and the automated sales functions have increased forecast accuracy and estimates of order probability.

## Filling in the gaps with process mining

Process mining visualises business processes by using time stamps of event logs along the process flow in the systems. The logs show how the work is done: an order is received, a product is delivered, a payment is made.

Process mining allows to identify gaps and variations between how processes currently are and how they could be. This can help to improve cycle times and increase performance by making better use of systems, for example. The goal of process mining is to turn event data into insights and actions to increase efficiency.



## Making better connections with IP telephony

Can you remember telephones with rotary dials? The concept of pulse dialling is now confined to history, given the modern telecommunication systems we have available to us today. The shift from fixed line connections to Internet-based IP telephony is a similar development.

KAEFER is moving towards a group-wide roll out of a more modern telephony solution based on Microsoft Teams. This provides greater mobility and flexibility and allows employees to stay connected, regardless of whether they are in the office, at home, at a construction site or on the road.

Location-independent and cross-platform use of MS Teams improves collaboration and enables to stay-in-touch much easier.

KAEFER Construction in Germany

## Making the digital visual. And vice versa.

*Geoscience is about scale. So is KAEFER Construction. The redevelopment project at the Institute for Geosciences at the Christian-Albrechts-Universität zu Kiel in northern Germany is a major project that will test the company's ability to provide clever digital solutions.*

When it comes to large-scale construction projects, it's just as important to be able to see the big picture as it is to see the little details that it's made up of. This is where digital visualisation plays a key role in giving project managers and construction operatives alike the possibility to optimise the way a project works. The redevelopment of the Institute for Geosciences (IfG) at the Christian-Albrechts-Universität zu Kiel in northern Germany is a complex and multifaceted construction endeavour. That makes it the perfect opportunity to put new digital solutions into practice.



### Complexity in scale and ambition

This project involves the construction of replacement areas for large parts of the IfG, including the erection of a modern building for working groups as well as a substantial and wide, two-storey geotechnical hall for large-scale experiments in geoscience. For the new IfG building, the intention is to achieve a silver rating according to the Federal Ministry of Construction's Sustainable Building Rating System for Laboratory Buildings.

All levels of the geotechnical hall are connected to the neighbouring IfG building. The three-storey structure (including the basement) is a reinforced concrete construction with prefabricated reinforced concrete trusses. The exterior walls and wall sections as well as the floor slabs are to be made of in-situ concrete. The façade design of the geotechnical hall will use large-format, surface-treated prefabricated reinforced concrete elements.



## Simplifying solutions for continuous improvement

Because of the cramped construction site and location, there are strict guidelines to follow in terms of access, logistics, area management, security and travel arrangements, to name a few. This is precisely where a digital solution comes in very handy not just to help visualise the complexity of the structure, but also to help manage the project.

This is achieved with an application that can be used on mobile devices as well as on large screens with computer access. The app originated with Callum Peter Berlin, a master's student at KAEFER Construction and can be used on the construction site to accurately document all progress. The control and construction is ensured by the real construction plan of the Gebäudemanagement Schleswig-Holstein AöR (GMSH), which is responsible for the implementation of the construction measure. The way the app works ensures the documentation and observation of different levels and rooms by clicking on the individual positions. In a dashboard displayed on a large screen on the construction site itself, the entire overview of the construction site and the rooms is illustrated. This makes it possible to intuitively observe the current state of progress every day with the help of a coloured traffic light system.

“This project is ideal for digitalising progress,” comments Torsten Zschischang, Interior Outfitting Project Manager at KAEFER Construction. “Our solution will clearly show the status of labour, machines, materials, execution progress and much more. This visualised representation is very important because different tasks are carried out by different trades. It gives us a quick overview of where, what and how things are running or not for our customers and subcontractors.” On top of that, the many different areas of the building can be divided into subcategories such as levels, rooms and even individual components. This means that every aspect can be scrutinised to ensure that labour and materials are being used efficiently.

Thomas Schneeloch, LEAN Manager at KAEFER Construction adds: “This kind of approach is a prime example of LEAN at work. It helps our employees gain a quick overview of what is happening, what jobs need to be completed and, perhaps most importantly, how things can be done better. LEAN is a process of continuous improvement and digitalisation and visualisation of processes plays a big part here.”



Reception area 25hours hotel, Hamburg



Office Building, Salzgitter



Shopping mall "My Zeil", Düsseldorf



Government building, Schwerin

## Norway

# An adventure on the high seas



*Working on an oil and gas facility in the middle of the North Sea is never an easy endeavour. It's all part of the job for the closely knit crew at KAEFER Energy in Norway, who braved the challenging conditions to embark on the adventure of a lifetime.*

Follow the world's longest offshore power cable emanating from the Norwegian coast for 162 kilometres and you'll eventually reach the Martin Linge oil and gas installation. Far out in the North Sea, the climate is cold, rough and raw. Oil and gas were discovered here back in 1978 and the facilities that extracted these natural resources were traditionally powered by onsite generators. Now, the facility run by Equinor is connected to shore power, which reduces CO2 emissions by 200,000 tonnes per year, which is the equivalent of the emissions from around 100,000 cars. The cable also makes it possible to operate the field from land with only limited offshore staff on site.

For KAEFER Energy's Resource Coordinator Janne Goa, "Martin Linge is an "adventure". It is a platform that needed significant upgrades to be ready for the Norwegian sector and for Norwegian conditions." Construction Manager Tor Magne Gundersen agrees: "It was bigger than we could have ever imagined," he says. "The organisational part of the project was an insanely challenging job. I am incredibly impressed with the efforts made by our resource department to be able to deliver personnel so we could reach our goals."

## A large job, to say the least

As an ISO supplier, KAEFER Energy was responsible for delivering project management, shop engineering, fabrication within insulation, surface protection, passive fire protection and rope access. "On top of that," explains Jens Tolås, Vice President of KAEFER Energy, "we were responsible for architecture, as well as heating, ventilation and air conditioning. It was no mean feat."

Yet despite the challenging environmental conditions and having to complete the project during one of the most intense phases of the COVID-19 pandemic, everything was done efficiently and, more importantly, safely. There were more than 13,000 mobilisations offshore with no serious incidents involving either people or the environment. This points towards a strong safety culture as well as a commitment on the part of each individual employee to ensure that they contribute to a safe and secure workplace.

## A seasoned crew

In addition to managing to complete the work to the client's satisfaction and returning from this "adventure" safely and securely, KAEFER's crew appreciated the collegiality of working in a team. Senior Engineer Lars Bertelsen "loved the versatility of the job as well as working with a great bunch of people". Rope Access Superintendent Øystein Tofting comments: "The best thing about KAEFER Energy are the people and doing something different every day." Janne Goa agrees and adds, "we all stood together and took on immense challenges. Only by working together did we manage to overcome them and I'm proud to be part of such a great crew."



Martin Linge field

South Africa

## Tomorrow starts today



*Innovation isn't just generally regarded as a good thing but is a major differentiator in the marketplace. KAEFER in South Africa builds upon its origins as a pioneer and disruptor in industry with its Innovation Days.*

KAEFER has always been an innovative company. It goes back to Carl Kaefer's forward-thinking idea of using peat to insulate the walls of cold storage spaces – he saw an innovative opportunity by looking at an engineering issue from a different perspective. This ethos has driven KAEFER for over 100 years and the challenges of the last 18 months have provided ample opportunity for even more pioneering thought and action.

### **Necessity is the mother of invention**

KAEFER's Innovation Day in South Africa is a case in point. What started as a face-to-face initiative in years prior, to showcase original new ideas and ways of doing things had to change shape quickly when social distancing became the norm. "If the core theme we were exploring was innovation," recalls Jayson Cleaver Managing Director of KAEFER in South Africa, "why not innovate with the format?" With his team, he sought the services of a media specialist who normally worked in live sports broadcasting. Together, they devised an innovative, interactive format. The idea was to connect pre-recorded elements with live features and allow the audience to interact by commenting on content and voting on questions, for example. "This worked very well," Jayson Cleaver says. "It was an ideal way to stimulate discussion while delivering content efficiently that might have otherwise might only been possible with smaller groups. Furthermore, the fact that the sessions were sharp, focused and easily digestible meant that we could reach a larger group of people who might have been too time-poor to attend an in-person event".

## The future is always just around the corner

The driving force of the Innovation Day was to showcase KAEFER disruptors in the marketplace and to highlight how KAEFER looks towards the future to continuously improve its technology and services. A couple of notable examples include Norwegian KAEFER Energy's advanced corrosion under insulation (CUI) sensor system and DPMS – The Order to Invoice Solution. The CUI sensor system represents a paradigm shift in the process industry when it comes to tackling CUI challenges and associated plant integrity. Smart sensors are installed by an autonomous robot, which uses artificial intelligence (AI) and numerical simulations to determine where to put them. This allows for a shift to preventive rather than reactive maintenance and can make a substantial impact on the integrity of pipelines, plants and facilities. DPMS is currently being rolled out in various markets and focusses on reducing unnecessary steps and increasing transparency by digitalising and streamlining the entire order-to-invoice process. Picking up on the latter point, Jayson Cleaver points out that: "when it comes to innovation, it's not just about a single light-bulb moment or saying that we need to digitise the process behind a pile of paperwork, but it's rather about looking at it as a journey of many isolated or incremental improvements that collectively add value add for our customers. The future is always just around the corner and KAEFER is truly an innovative company that leverages technology to provide pioneering solutions to its clients."



## Locally derived and delivered, globally scalable

The Innovation Day in Southern Africa targeted business leaders and decision-makers in the region and was delivered by KAEFER's local team with support of KAEFER colleagues from the branches in UK & Ireland, Norway, and Australia as well as the Headquarters in Germany. Over 300 decision-makers participated in the 4 sessions and there were over 5,000 views on social media following the events. This is just one metric which shows that the concept, while local, has legs and can be easily replicated across international markets of course while benefiting from picking up on local themes. Furthermore, it is an effective way to reinforce KAEFER's position as a very innovative company. "In a time where a good proportion of the industrial services business community hasn't yet woken up to Industry 4.0, we're already talking about Industry 5.0," Jayson Cleaver says.

Corporate Innovation & Technical Excellence

## Insulating just one industrial valve is enough to power a Tesla



*Insulation plays the part of the hero. The villain is heat escape. Find out how energy audits performed by KAEFER's Corporate Innovation and Technical Excellence (CIE) department in collaboration with KAEFER entities in different countries are raising awareness of heat loss from insufficient insulation and working towards a more energy-efficient future.*

It sounds incredible, but the energy loss from an uninsulated DN 150/6 inch valve running all year would amount to 10,600 kWh. Transforming that thermal energy with 40% thermodynamic efficiency would give us 4,000 kWh of electric power – enough for a Tesla Model S to travel 20,000 km (EiiF Study 2021).

According to the EiiF study, which also used data from KAEFER energy audits, looking at the whole European Union, the annual energy savings potential from improved insulation is as high as the annual energy consumption of 10 million households combined.

These are just some of the insights gleaned from

KAEFER's energy audits, which use advanced technology and calculations to analyse the state of a client's insulation.

### The great escape

Once a pipe system is installed, it's difficult to see heat loss. That makes thermal energy a master at escaping from areas that are not sufficiently insulated. KAEFER insulation specialists use thermographic analysis to inspect areas in industrial facilities to see what the eye cannot: temperatures. This allows them to record ambient conditions and thermal data to provide clients with an analysis of where energy loss is taking place and where insulation can be optimised.

The economic rationale for improving insulation is as clear as the environmental. As an example, adding 100mm of insulation to just 35 metres of a previously uninsulated 203°C hot pipe can bring savings of up to 24,000 Euros per year in energy costs. Consequently, it would only take a little over 2 months to recoup the investment. In environmental terms, insulating those 35 metres would save 137 tonnes of CO<sub>2</sub> per year. Taking those figures and applying them to facilities where there are several hundred metres of pipes and other areas that could benefit from better insulation makes the case even stronger. Also, for plants that are already insulated, energy audits almost always reveal significant energy and cost saving potential with an average return of investment in less than 2 years. Capturing energy and keeping it from escaping is a simple and logical way to save money and CO<sub>2</sub>.



## Playing an ever more important part in a greener future

KAEFER offers TIPCHECK (Technical Insulation Performance Check) energy audit training through CIE in collaboration with the European Industrial Insulation Foundation (Eiif). In January 2021 in Bremen, 22 participants from 10 companies and 9 different countries learned how to carry out an energy audit according to TIPCHECK standards. There were detailed explanations of how data could be collected and reported, and participants learned about the requirements of ISO 50001 and EN16247 energy management systems. They were also introduced to the TIPCHECK Based Inspections App, which provides an overview of potential energy savings. This training allows KAEFER to play an increasing role in helping clients and partners to achieve the targets outlined in the European Green Deal. In many cases, when it comes to insufficient insulation, the cost of CO<sub>2</sub> emissions can actually exceed energy costs and it's also expected that prices per tonne of CO<sub>2</sub> will increase. This is why energy audits and insulation optimisation simply make sense for companies and facilities working towards achieving ever more stringent targets.

## More efficiency, more sustainability

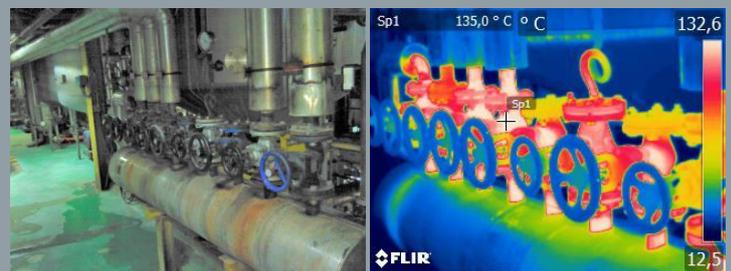
Energy audits are an excellent way to further support sustainability – and they are good for clients and KAEFER alike. In addition to the revenue generated by performing the analysis, there is a great deal of potential for follow-up orders for insulation services. On top of that, it's a simple and effective way to demonstrate specialist expertise and to increase awareness not just of KAEFER but of the environmental benefits of a proactive insulation approach.

Thomas-Peter Wilk, Head of Corporate Innovation & Technical Excellence explains, “With technically proven technology such as insulation materials and energy audits, considerable heat loss savings can be achieved in existing plants without the development of new technology or solutions. The payback periods for the necessary investments are usually less than two years. In addition to the savings on the energy cost side, our insulation systems are an active contribution to environmental protection – demonstrating actions rather than words.”

It is hoped that understanding the key role insulation plays in optimising costs and energy consumption will lead to better and more efficient industrial facilities in the future.



Uninsulated valves (temperature: 135 °C) in refinery plant. Energy audit from KAEFER revealed a savings potential of 1.340 KWh and 270 tons CO<sub>2</sub> per year for the whole refinery with a payback time of just 0.7 years. Total investment in insulation: €32.400, but energy savings equal €45,000 per year.



Uninsulated fittings (temperature: 162 °C) in a food producing plant. Energy audit from KAEFER revealed a savings potential of 730 MWh/a and 150 tons CO<sub>2</sub> per year for the whole plant with a payback time of just 0.2 years. Total investment in insulation: €3,600, but energy savings equal €17,500 per year.

## KAEFER's Lean Journey

# With LEAN, quality and quantity go hand in hand.



*LEAN isn't just an abstract concept at KAEFER, it's a working way of life. As the quantity of LEAN projects increases, so does the quality of work, and with it, the growth, development, and job satisfaction of everyone in the company.*

Sometimes it's good to get a view from above to see how progress is being made. In the case of KAEFER's Lean Journey, things look good from the cockpit: there were over 600 LEAN projects underway in 2021 with substantial growth seen in LEAN turnover coverage as well as an increase in Lean Leaders. But it's not just about the quantity, when it comes to LEAN, the quality matters just as much.

### Walking the walk and talking the talk

What does it mean to consider the LEAN quality of our organisation? "Simply put, it's about the culture, the day-to-day work and our LEAN maturity," explains Dr. Alexander Faber, Head of Corporate Operations Excellence. "In LEAN, there is a concept called 'Gemba'. In Japanese, 'Gemba' means the actual place, the scene of an event. For business, this is where value is created, such as a construction site, an industrial facility or anywhere else where services are rendered. Management is encouraged to do a so-called 'Gemba Walk' to see the actual process, understand the work being done, ask questions and learn. This is one way in which we can gain an understanding of the LEAN quality of our organisation and determine where improvements can be made."

We can also assess how LEAN is practised in projects by considering our LEAN maturity ratio. This begins as local self-assessment on the part of the people managing the project and is then validated by local managers and Lean Leaders as well as Global Lean Trainers & Coaches who are external to the local organisation. Amongst others, the criteria for achieving a high maturity score include adhering to the four principles of LEAN:

- > **Visual Controls:** Tracking charts and other visual tools that reflect actual performance compared to expected performance and HSE KPIs of any process in a Lean operation.
- > **Daily / Weekly Accountability Process:** Meetings which plan, prepare and review execution tasks, identify problems and improvement opportunities and follow-up on Lean improvement workshops/ PDCA experiments.
- > **Leader Standard Work:** Establishes tasks which should be repeated on a regular basis (multiple times a day, daily or weekly), for all relevant leaders: Foremen, Supervisors, Site Managers, Project Managers and Accountable Line Managers.
- > **Discipline:** Leaders themselves consistently adhere to and follow up on others' adherence to the processes that define the first three elements. Leaders are role models at every given moment at work.

These are just a few ways to look at LEAN and a high maturity score also involves implementing general efficiencies in workflows and projects as well as an awareness and willingness to implement LEAN principles amongst staff and management. To know how things stand at the moment, KAEFER is regularly measuring the LEAN maturity ratio on our projects worldwide. In the past years we could continuously improve our maturity score. However, the principle of LEAN is continuous improvement, and therefore the score will further increase in future.

## **LEAN is learning**

LEAN is not a start-to-finish process. It's ongoing and involves constant engagement, dialogue, introspection, discussion and learning. For example, KAEFER has established a global LEAN site management best practice platform. This is a SharePoint in which examples of LEAN in practice are collected from all over the world. There are images and project descriptions outlining how LEAN was implemented and how value was created, and waste was eliminated. The purpose for these examples is to serve as impulse and inspiration for others and also to use these cases as a benchmark with which to judge their own LEAN maturity assessment. This ties into not just the concept of continuous improvement, but also into the idea that LEAN is collaborative process, where people can learn from one another to grow.

## **People's growth is KAEFER's growth**

In addition to taking inspiration and learning from others, KAEFER invests heavily in its Lean Development Programme. The emphasis is on waste identification, waste elimination and process standardisation. The target group of the ongoing training and coaching initiatives are managers, project managers, site managers, supervisors, foremen and operators worldwide. Globally they amount to a total of over 25,000 people. The heart of KAEFER's Lean Journey is this Lean Development Programme, which is increasing job satisfaction and performance at the same time.



Sweden

## The story of the man who had never seen a snowflake

*As the political situation heated up in Chile in the 1980s, Alejandro Flores and his family chose the cooler climate of northern Sweden to start a new life.*

Alejandro Flores was just seven years old when he and his father fled the Pinochet regime in Chile and came to Sweden. They had to leave his mother and two siblings behind at first, while they forged a new existence in Scandinavia. Things weren't easy to begin with. From having to get accustomed to the new climate and staying in various small appartements to learning about a new culture. But Alejandro has fond memories of the family feel of the big Chilean refugee community that lived in Kiruna in northern Sweden and how even adults would play in the snow, which they had never seen before.

### Going south

Later, Alejandro's mother and siblings were finally able to join and the whole family received permission to stay permanently. However, they decided to move down south to Lysekil, where it wasn't quite so cold. Alejandro's father found work in a fish factory, where his son would later work as well after finishing school.

Sometimes, you need take a risk to find your true calling and Alejandro did exactly that. In 2001, he quit his job at the fish factory to become an apprentice scaffolder. "I finally found my true passion," he recounts, "I got to work outside and experience a real sense of freedom. I also didn't have the smell of fish on my hands every day, which I must say was a big bonus as well."



## Moving steadily upwards

Alejandro worked hard and was fortunate to meet people on his journey who took notice of his ability and helped him. In 2005, the scaffolding company he was working for was acquired by a competitor and a colleague there needed supervisors for a shutdown project at the Preem refinery in Gothenburg. He jumped at the opportunity and was eventually promoted to site manager. “My philosophy was always to work as hard as I could, since you never know who is watching you at any given moment,” he says. This work ethic would pay off, as Alejandro would soon find out.

## Becoming part of a dynamic duo

In 2012, KAEFER in Sweden wanted to establish a scaffolding division and needed good people to run it. They came upon Jonas Wetterberg, who was a colleague of Alejandro’s and KAEFER managed to attract both specialists to supervise the establishment of the division. One of the first pitches was the maintenance contract for Preem, which the team won, despite being made up of only three people. The client trusted them regardless and KAEFER in Sweden has managed to hold the contract ever since. Preem is Sweden’s largest refinery with two plants in Gothenburg and Lysekil. They account for 80 percent of the Swedish and 30 percent of the Nordic refinery capacity. In total, nearly 18 million cubic meters of crude oil are refined every year at both sites.

Jonas Wetterberg is now scaffolding manager at KAEFER in Sweden and Alejandro is site manager, splitting his time between the two refineries in Lysekil and Gothenburg. The division has grown under the dynamic duo’s stewardship, with 20 in-house scaffolders and between 35 to 50 subcontractors.

## One big, happy family

“Why KAEFER? It’s simple: it’s a family thing,” Alejandro comments. “I’m reminded of how I felt when I first came to Sweden and the sense of being part of one big family up in Kiruna. I have that at KAEFER now too and I feel like I belong and that I’m part of something special. We built the scaffolding division from the ground up and I was supported by my colleagues and the company during the entire process.” KAEFER feeling like a family to Alejandro could also come from the fact that his father and brother work there as well. One is a forklift driver and the other is a scaffolding supervisor. And who knows, perhaps his 18-year-old son will follow in his father’s footsteps.



*Alejandro Flores*

KAEFER Industrie in Germany

## Things are looking up for KAEFER Industrie



*There are certain colleagues we all look up to. In this case, Germany's rope climbing specialists are quite literally head and shoulders above the rest. Find out about how KAEFER Industrie is leveraging one of the most flexible and gravity-defying forms of access.*

Sometimes the simplest technology is the most effective. It's often much less time and resource intensive to send a team of highly qualified climbers up the side of a structure to perform maintenance or non-destructive testing (NDT) than setting up scaffolding, for example. That's why industrial climbing is well established in several KAEFER markets, such as the UK & Ireland, Norway, Spain and Brazil. It's still less common in Germany, but that's beginning to change dramatically.

### **Reaching the parts that others can't reach**

There are many older industrial complexes in Germany that require maintenance. That's where rope access can play a part as a more agile and efficient way to access hard to reach areas. For example, NDT normally takes only one to two hours, while erecting and taking down scaffolding can take three to five days. Experienced rope climbers can quickly gain access to parts of a facility that are high up or down low, make an assessment and then decide whether further measures need to be taken or even perform small maintenance themselves. As maintenance is a core part of KAEFER Industrie's business, rope access is an ideal addition to their core services.

## Climbing into the spotlight

In mid-2021, KAEFER Industrie in Germany was approached by the operator of a major natural gas processing facility and was asked if they had rope climbers. As KAEFER Industrie was actively working on increasing their competence in the field, this was an ideal opportunity to showcase what the specialists could do. The initial job would involve the ultrasound inspection of pipelines as well as the disassembly, examination and reassembly of the metal sheets around them. It was planned to work with experienced colleagues from the UK & Ireland, but as soon as the job was about to start, the Delta variant of COVID-19 hit the country, which meant lengthy quarantine times for the team coming to Germany. In times of crisis, flexibility and agility is as important in the organisation as it is climbing up high at a client's facility. So, KAEFER colleagues from Norway quickly stepped in as a replacement and completed the job to the client's full satisfaction.



## Getting to know the ropes

Buoyed by the success of this first foray into rope access, KAEFER Industrie is fostering the training of in-house rope access specialists. The idea for rope access was brought up by Bastian Hagemann, Technical Services Engineer at KAEFER Industrie. He has become an enthusiastic champion for the discipline and is fully supported by management, who emphasise the development, growth and motivation of its employees.

The idea over the medium to longer term is to get qualified insulators onto the ropes and offer the same quality of insulation that they would normally provide on scaffolding. This is a real unique selling proposition and would continue to boost organic growth as well as agility with a steadily changing service portfolio. It's also about showing how rope access is a safe and effective way to perform industrial maintenance and that KAEFER Industrie has the skill and motivation to perform it. The process of training and qualification involves going through various stages from level one to level three, as well as absolving a certain number of hours 'on the ropes'. There is always an external level three expert with several years of experience there to supervise and support the new recruits. This further contributes to safety and best practice.

Two insulators and one project leader have currently made it to level one and they can't wait to work their way up to further qualification – in the truest sense of the term.



*Bastian Hagemann and teammate in ropes*

## Qatar

# Access all areas

*The last few years have been challenging for KAEFER in Qatar. With a lack of new build projects, KAEFER in Qatar was mainly working on maintenances contracts. This helped build more experience both in the estimation and execution team.*

But then, in early 2021, the team around Estimation Manager Bipin Badajena pitched for the annual maintenance contract for the Qatar Gas Operating Company. Thanks to Bipin's extensive experience in the Qatari market and the support and vision provided by the team led by General Manager Christopher Selvaraj, they managed to win and will be providing services in just about all areas of the gas giant's operations.

From insulation, scaffolding and painting to refractory and fire proofing, KAEFER in Qatar will spend the next five years helping the Qatar Gas Operating Company to keep its facilities running at the peak of their capabilities. That will also allow the client to progress with a major expansion of its LNG projects.

### **Pioneering engineering**

This project will be the first in Qatar to use the Layher Scaffolding System. It uses a combination of positive and non-positive connections in a bolt-free design with an automatic locking function, making it easier to forge connections that are right-angled, obtuse-angled and acute-angled. This modular scaffolding system is ideal for complex and difficult layouts, especially those with heightened safety requirements. On top of that, the entire project will make use of KAEFER's new technology, such as the DPMS – The Order to Invoice Solution. Based on LEAN Site Management, DPMS is a central project management tool in which all resources, processes, capabilities and manpower are visualised and organised in real-time. This allows teams and project leaders to increase efficiency and places greater emphasis on transparency.

### **Laying the groundwork with LEAN**

In addition to using innovative new technology and digital tools, the team has prepared for the major Qatar Gas Operating Company job by implementing a pre-execution LEAN project approach. This provides for an optimised and waste-free execution process and helps the team adopt a systematic work culture. In the spirit of continuous improvement, the team of up to 600 people working at peak times will collaborate and aim to eliminate unnecessary steps, whilst providing quality workmanship at every step of the way.



## Saudi Arabia

### We are the Champions

It's not just one of the largest intumescent fire proofing projects in the Middle East, it has also been crowned KAEFER LEAN Champion three times by outperforming key LEAN metrics, including LEAN turnover and the LEAN maturity score. The fireproofing & coating process executed at the Saudi ARAMCO-approved KAEFER Painting/Coating Yard in the Al-Jubail is a major endeavour. The facility covers an area of 25,000 m<sup>2</sup> with 18 coating booths and hangers and has the capacity to handle daily production of 1,600 m<sup>2</sup> of coating. This project also manages the loading, unloading and transportation of 22,500 tonnes of coated steel structures and piping for erection at site by other mechanical contractors.

Success in the region and on this project has been achieved by maintaining the highest levels of productivity and material utilisation norms, enabling a significant increase in margins. A proactive marketing approach, utilising capacity fully and offering coating services at competitive prices has also helped a great deal. Furthermore, there has been successful implementation of on-the job training and full-time engagement of local Saudi tradesmen, who now make up approximately 10% of the workforce. They proudly work at the same levels as their expat colleagues with formal approval from ARAMCO.

This year, the team hopes to achieve 500,000 m<sup>2</sup> of overall coating orders at the yard. An ambitious target, but surely achievable by the LEAN Champions.



## Oman

### For all the ups and downs

358,410 cubic metres. That's is the volume of scaffolding KAEFER Insulation LLC in Oman has managed to successfully erect and dismantle since February 2020. Despite shortages of skilled labour, the team in Oman has continued to provide services for a one of its major clients: Vale Palletizing LLC. At the same time much progress has been made in the company's Omanisation drive, with education and training provided for 12 Omani scaffolders, 3 administrative staff and 2 health and safety operatives. This bodes well for the future and KAEFER in Oman will continue to provide high quality service for complex access projects.

Vietnam

## Increasing our sphere of expertise



*Insulation on spherical storage tanks in Vietnam*

*How do you insulate a structure that had never existed before in Vietnam? You leverage the know-how of all the experts in the area to work together across frontiers and solve challenges together. Should be simple, right?*

The most challenging projects yield some of the best results. That's what the KAEFER teams in Vietnam and Malaysia found when they joined forces to perform a very special kind of insulation on structures that had never existed in the area before: spherical storage tanks. At the Long Son integrated petrochemical complex 100km south of Ho Chi Minh City, KAEFER Engineering Vietnam won the contract for the insulation of five tanks.

### Coming round to an idea

Spheres are used to store liquids and pressurised gases and most operate at low temperatures, some of which can be down to -50°C.

The main benefit of using a spherical shape comes from reducing stress concentration, as pressure is uniform over the entire surface. Because of the cold inside and the high humidity and temperatures outside, thermal insulation is key to maintain equilibrium within the spheres. To overcome the challenges inherent in the environmental conditions,

the KAEFER team used foam glass to insulate the spheres. This is not an easy process, as every piece is different and requires special skill in terms of installation, such as shaping by milling, and cladding fabrication as well.

There was expertise within the broader KAEFER region to do this, but the problem was getting a team to Vietnam to train local staff during a period of strict travel restrictions. This was also a new process and it was not easy to plan something that effectively had never been done before in the country. The KAEFER team in Malaysia rose to the challenge, by liaising with the client and helping to fly in a team of specialists from Indonesia to train local staff.

### Keeping the ball rolling

Faced with quarantine times of up to a month and enhanced lockdowns from August 2021, the team soldiered on and managed to train 50 local workers to fabricate and install the foam glass insulation and cladding for the spheres. "At one point, things really did seem desperate, especially when stronger lockdown measures came into force," recounts Afzal Khan, Managing Director KAEFER in Malaysia, Thailand & Vietnam. "But thanks to the efforts of our teams, we were able to leverage our synergies and apply our vast experience and technical know-how in such a complex project. My thanks go out to local site Manager Mr. Hieu and Operations Manager for Malaysia Mr. Jeeva, who put together the team and kept things moving even in these difficult times."

The teams are making swift progress and the spheres are all on schedule. This bodes well for the future, as the client is very happy with the work so far and can look upon structures that have never before graced the landscape of the Long Son Commune in Ba Ria-Vung Tao Province, let alone anywhere else in Vietnam.

France

## Moving not so heavy metal

*Nuclear reactors have special technical needs. Not least when it comes to insulation. Nobody knows this as well as KAEFER WANNER in France, who have been working on upgrading the insulation in the world's largest producer of nuclear power.*

France is one of the world's leaders in nuclear energy, where 70% of its power production is coming from. The upkeep of the 56 reactors in France is a major job and KAEFER WANNER has been using the synergies in the Franco-German teams to modernise and replace conventional insulation with Reflective Metal Insulation (RMI).

Unlike other insulation materials, RMI not affected by compaction, decomposition or moisture absorption over time. The closed cassette design makes them comparatively easy to install. RMI technology can also be used as a vapour barrier because it is water-resistant. RMI is non-toxic and non-carcinogenic, which makes installation safer and places fewer demands on safety equipment. A major advantage of RMI is that it is easy to decontaminate. Due to the closed construction in stainless steel, RMI modules are particularly easy to clean. RMI is, due to manufacturing, more expensive than conventional insulation materials, but is increasingly becoming mandatory due to new regulations in France.

### Change as a challenge

For KAEFER WANNER, one of the major challenges of installing RMI is to ensure the same thermal performance that clients have become used to. Making changes to established practices that have been in place for many years can be difficult. But the benefits of RMI are clear: increased performance, longevity and flexibility in maintenance. Reduced times for disassembly and reassembly of insulation, during a power plant shutdown (outage). This also reduces the radiological dose absorbed by installation personnel

in radiation-exposed areas of a plant. Furthermore, KAEFER WANNER adopts a tailored approach, with each insulation system custom designed, engineered and manufactured for a plant's specific requirements.

### New relationships and new methods

In responding to the changes and new requirements of the marketplace, KAEFER WANNER took advantage of the special expertise of its colleagues in Germany (CCCN). This close collaboration also helped to establish new methods, with the manufacture of the RMI taking place at the workshop in Pompignac using a laser cutting machine. The German competence team CCCN led by Hans Joachim Riekenberg, the Pompignac Workshop run by Rémy Fagnot and thermal studies carried out by Nicolas Bron, thermal design engineer, with support of their German colleagues as well as adopting a LEAN manufacturing approach all came together to successfully help bringing French nuclear facilities into the future.



Workshop of KAEFER WANNER

Spain

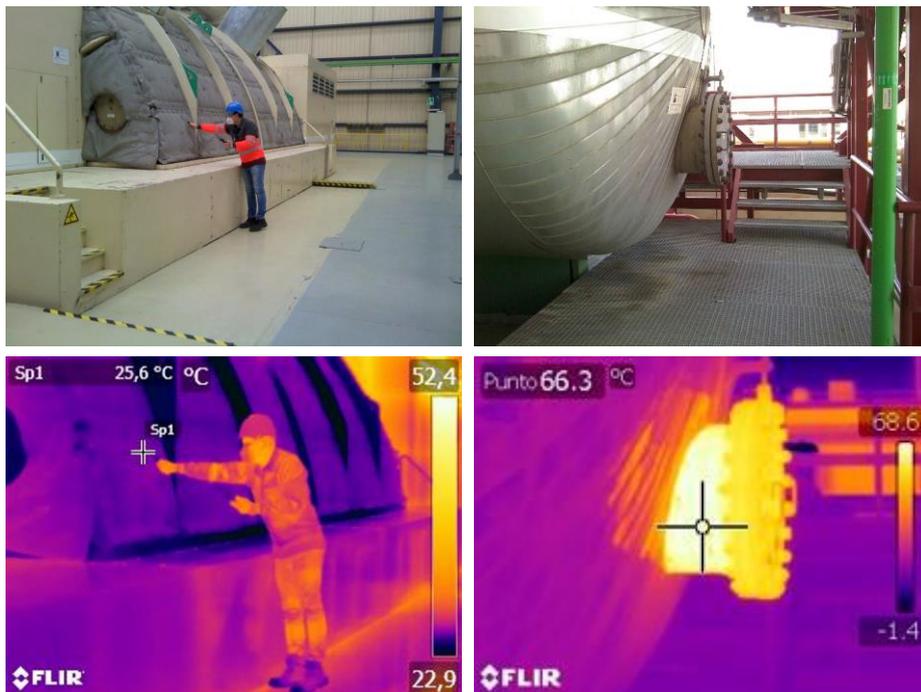
## Using all of our powers for the conservation of energy

*Insulation keeps cold things cold and hot things hot. But when heat or cold escapes from insufficiently insulated pipes or structures, so does energy. That's where energy audits can play a leading role in helping insulation to do its part.*

It's invisible to the naked eye but we cannot live without it. It's a vital part of our daily health, comfort and wellbeing, whilst driving our progress at the same time. Simply put, energy is the bedrock of our civilisation. That's exactly why it's so valuable and needs to be conserved. And one of the main ways we can reduce energy use and preserve this precious resource is through optimised insulation.

### Protecting what we value

The principle is relatively simple: energy loss can be reduced by improving the insulation of buildings, pipes, facilities, rooms or houses. In practice, however, the challenge can be finding the source of energy escape and mitigating it accordingly. That's exactly what KAEFER in Spain has been working on with its clients. By performing detailed audits using cutting-edge thermal visualisation technology, they can identify areas that aren't optimally insulated and consequently save energy, emissions and money.



“When we conduct an energy efficiency audit, we estimate losses, not used heat flux and we evaluate why a system loses energy,” explains Jesús Carrobes, Commercial Manager at KAEFER Servicios Industriales. “This can be because of bad insulation or lack of insulation. For example, a hot pipeline loses energy through thermal loss, whereas a pipeline that's too cold and freezes, ends up absorbing energy. We look at all areas to see where efficiencies can be introduced. On top of that, we make detailed checks of existing insulation, looking for condensation that causes corrosion or heat stress to components and systems.”

The people who perform these audits are highly qualified professionals. Like Marcos Calle, who is part of the KAEFER Insulation Experts Group (Thermal Insulation Community). Anyone can carry a camera, but only an EiiF-certified Tipcheck engineer with at least a level 1 thermography certification, can perform these types of studies. Things may also not always be as they seem. Sometimes a pipe will look superficially OK, but detailed thermography will expose areas where energy escapes or is absorbed. Only a professional with a trained eye and the right specialist equipment can see what others might miss.

A further advantage KAEFER has in this area is a constant presence at many client facilities, thanks to long term commitments and maintenance contracts. That means a proactive approach can be taken and preventive maintenance can be performed, providing further advantages to the client. “We work in partnership with our clients, day in, day out,” Jesús Carrobes adds. “Energy audits allow us to provide even more added value, since most of our clients are keen to improve their systems and become even more efficient. Our advantage is that we are familiar with their facilities and complex infrastructure, which means we know exactly where we can add value.”

## Wrapping it all up

Sectors such as chemical processing, oil and gas or metal transformation use a great deal of energy. Generally speaking, investment into insulation usually pays for itself in less than three years. If we can eliminate thermal losses from the pipes that transport gas or the tubes that transport liquids, we can make a great deal of headway towards a more sustainable future. On top of that, regulatory frameworks that apply to emissions and energy consumption are likely to become increasingly strict for many industries. This means that demand for energy audits and the associated measures to improve energy efficiency will continue to grow in Spain as well as across Europe.



KAEFER Gebäudetechnik in Germany

## The foundations for success

*Buildings need love, care and attention. And maintenance as well. A new KAEFER entity is focussing on the latter and helping to get buildings ready for the future in terms of energy and technology.*

Good maintenance is the key to good relationships. This applies as much to business as it does to client relationships. Effective preventive and proactive maintenance retains value, increases quality of life and also contributes to environmental sustainability. That was the foundation that KAEFER in Germany built upon when a new company was founded to focus on building maintenance and technology. Starting activity in January 2021 KAEFER Gebäudetechnik GmbH, GT for short, currently has a location in Hamburg and a production facility for sanitary components in Bremen. This forms the basis for a successful future in the field of heating, ventilation, sanitary and electrical engineering.



*Residential building in Hamburg, Germany*

### Growth is in the pipeline

KAEFER Gebäudetechnik specialises in the technical refurbishment of residential buildings in the social housing sector. The company was founded primarily to serve housing cooperatives and housing associations. This involves the construction, management, administration and

letting of real estate. The specialisation in the housing industry is particularly attractive given the population growth seen in large cities and the associated need for housing modernisation.

“We see a lot of potential and that’s based on our competences as well as the existing relationships we have with customers in the housing industry that come from ongoing façade renovations,” Frank Schwermann, Operational Manager at KAEFER Gebäudetechnik, explains. “But we also provide services for the modernisation of individual houses and apartments. The key is to retain and increase the value of properties, while also contributing to sustainability by using modern, efficient technology. This makes us excited about the further development of GT.”

### Building a better future

The vision for GT is that of a sustainable company, operating in a market where good work can be done over a longer period of time. “The biggest challenge at the moment is finding the right people,” comments Arne Skuddis, Managing Director of KAEFER Gebäudetechnik. We have been growing very quickly and the volume is there, it’s simply a matter of getting the necessary support to help us move forward. In any case, GT is a flexible, innovative, and impactful business, which will continue to grow and provide efficient solutions.”

KAEFER Gebäudetechnik can also build upon established construction locations and take advantage of the associated synergies in regional clients and suppliers throughout Germany. Driven by Arne Skuddis and Frank Schwermann, the company has an eye on establishing itself in a market that isn’t just interested in the lowest price, but rather achieving the highest levels of quality from competent and knowledgeable specialists. Based on that alone, Gebäudetechnik clearly has the right foundations for success.

## Malaysia

# When it rains, it pours

*12,000 m<sup>2</sup> of passive fire protection in just 4 months, 70 specialists from six countries, 357mm of rain in 24 hours. If that wasn't enough already, there also happened to be a pandemic. And that was just the start of the challenge.*

When KAEFER's team in Malaysia was awarded the contract to carry out the cementitious passive fire protection work for the Arkema Symphony Chemical Plant in Singapore, they knew the job would be a challenge. It was quickly established that fabricating the structures in Malaysia using Isolatek® material and assembling them in Singapore made the most sense. Yet COVID-19 cases were steadily rising in the entire region and travel restrictions meant that getting the right people to the right place would be anything but easy. On top of that, out of the 70-strong team, there were six different nationalities, which meant that managing cultural habits, travel and replacements when there were issues with lockdowns and quarantines was a challenge as well. And then there was the weather. Or a flood, to be exact. In January 2021, 357 mm of rain fell in 24 hours in Johor state, where KAEFER is based. As the saying goes, when it rains, it pours.



### **The umbrella of continuous improvement**

Against this backdrop, the KAEFER team managed to complete 12,000 m<sup>2</sup> of passive fire protection professionally and reliably on time and on budget. How? LEAN. Thanks to best practice examples from other markets around the world, the KAEFER Malaysia team in Malaysia could learn from the experience of others and apply what worked best in practice. Using a modular approach provided greater efficiency as well as flexibility in the face of challenging and constantly changing circumstances. Furthermore, LEAN came in handy training the Indian, Malay, Chinese, Indonesian, Bangladeshi and Nepalese workers involved in the project.

The result was not just a satisfied client, but a diverse group of KAEFER professionals strengthened by overcoming challenges together and implementing LEAN practices across the board – even under stormy skies.

## KAEFER FOUNDATION

# Bringing our claim to life by changing lives

*Good things come from positive energy. The KAEFER FOUNDATION has spent the last decade helping KAEFER employees, their families and communities through thick and thin. Since we never know what's going to happen, it's good to know there's a team of passionate people that have your back.*

"When it counts, count on us". That's the KAEFER claim and the KAEFER FOUNDATION is there for our colleagues and their families around the world in times of acute need and provides non-bureaucratic help and support. Funded solely through charitable donations, the KAEFER FOUNDATION has been established for over a decade and initially provided relief for people affected by natural catastrophes and other crises.

Today, it's not only about disaster relief, however. The KAEFER FOUNDATION also tackles environmental, social and academic challenges. From the prevention of diseases such as HIV/AIDS and supporting education, training and research to fostering initiatives for the protection of the environment, the KAEFER FOUNDATION aims to make a real difference in areas that count.



### Disaster strikes close to home

The summer of 2021 brought some of the worst flooding Western Germany has ever seen. This is a region where KAEFER is quite active. Luckily, none of our employees or their relatives were directly

affected but the KAEFER FOUNDATION took swift action nevertheless and initiated a fundraising campaign to support "Aktion Deutschland Hilft e.V.", an alliance of German aid organisations. Many colleagues showed their compassion and participated in one of the biggest support initiatives we had in Germany.

### Every day is a good day to devote to our planet

June 5th is World Environment Day and in 2021 the KAEFER FOUNDATION marked the occasion by asking employees from around the world to submit ideas for positive change. The widest variety of creative suggestions were received, with colleagues from the RIP Espirito Santo team in Brazil suggesting a 'monkey bridge', providing safe passage for the animals across roads and an innovative idea to get every last drop out of cans of paint. In Canada, the KAEFER team created an initiative to clean the rivers and pick up waste in a public park and KAEFER WANNER in France installed two beehives at their offices in Nantes to make organic honey. These are just a few of the many ideas the KAEFER FOUNDATION received. More can be seen at <https://www.kaefer.com/World-Environment-Day-2021.html>

What the KAEFER FOUNDATION team found when reviewing these clever initiatives and ideas was that they could be divided into three categories: biodiversity, recycling and waste collection and clean up. And that's why the KAEFER FOUNDATION will support four non-profit organisations working in those areas for one year.

They include:

**The SOS Mata Atlântica Foundation**, whose mission is to defend what remains of Mata Atlântica (the Atlantic Forest) in Brazil.

**DK Clean Up**, an organisation that collects waste on the beaches of Dunkerque in Northern France and uses the materials found for up-cycling projects

**Live Life Always**, a South African initiative organising local waste collection and recycling campaigns and

**Clean Shores Global**, an organisation formed of local community groups to clean ocean shorelines, lakesides and riverbanks from pollution in Norway.



## Every kilometre counts

Following on from the success of the initiative last year, the Venuslauf 2021 Charity event saw KAEFER staff and their families from around the world cover 23,904 kilometres. That's double the distance covered last year and it raised an impressive 35,600 Euro for various different cancer charities. The KAEFER FOUNDATION is looking forward to an even greater turnout next year and is hopeful that the participants will be able to cover the distance around the globe – 40,000 KM.

## Wearing our hearts on our sleeves

Despite a very different virus dominating the headlines over the last eighteen months, HIV/AIDS is also still around and affects millions around the world. The KAEFER FOUNDATION supports World AIDS day every 1st December and organised a photo initiative this year to raise awareness of the stigma and discrimination facing people living with HIV/AIDS. KAEFER employees around the world were invited to take a photograph of them wearing or showing a red ribbon, the global symbol for solidarity with HIV-positive people and those living with AIDS. For each submission, the KAEFER FOUNDATION donated 1 Euro for HIV/AIDS orphans.

## The faces behind the FOUNDATION

The KAEFER FOUNDATION is as dependent upon individual donations as it is on the efforts of a very special group of individuals: the team in Bremen around Managing Directors Francisca Gorgodian and Dirk Brand-Saßen. For Dirk, "it's a matter of passion. The KAEFER FOUNDATION is very close to my heart and I find it incredibly motivating when I hear back from people around the world about the difference we've managed to make." Francisca Gorgodian agrees, adding, "working for the FOUNDATION is about engaging people and giving back to the community and that gives me a great sense of personal satisfaction. For me, it's very different from my 'normal' job in that respect and it's an honour to be able to make an impact on another level."

The KAEFER FOUNDATION also has a different public face now, with a fresh corporate design developed two years ago. With this new look and renewed purpose, the team is aiming to play an even more active role. Everyone is full of ambition for future initiatives and is also looking forward to engaging with the global KAEFER family to make the world a better place.

## Our 40th and 50th anniversaries 2021

*Congratulations to all our employees who are celebrating their 40<sup>th</sup> or even 50<sup>th</sup> anniversary at KAEFER this year! Four or five decades is a long time by any measure, so we'd like to thank you for your many years of commitment and your contribution to KAEFER's success. We wish you all the best on this outstanding anniversary, which also fills us as a company with great pride.*



**KAEFER Industrie GmbH, Germany**

### Günter Rohs

is a Hamburg native. He began his apprenticeship as an insulator at the Hamburg site on 1 April 1971. After successful completion, he initially worked at the Esso construction site in Moorburg for six to seven years. Günter Rohs was then appointed senior fitter and gained experience on other construction sites, including gas fields. In 1986, he passed his examination to become a safety officer. In the course of this new job, Günter Rohs got to know almost all of Hamburg's construction sites. After the large-scale project on the BP in Hemmingstedt, he managed to advance to site supervisor and was then responsible for various construction sites. Particularly interesting was his time as a foreman on a construction site in Norway.

From 2001 to 2011 he worked as a site manager at the Stapelfeld waste incineration plant, followed by the Moorburg construction site from 2012 to 2015. After stops at various construction sites, he was in charge as a site manager and advisory project manager at various construction sites, including Erasco (Lübeck) and ArcelorMittal. In order to fulfil his personal goal of 50 years and one day of service with KAEFER, Günter Rohs had to postpone his planned retirement a little and was thus able to pass on his wealth of experience to the younger generation. When he retired on 30 April 2021, Günter Rohs had worked exactly 50 years and 30 days for KAEFER. **We would like to take this opportunity to thank Günter Rohs once again for his commitment and loyal service with KAEFER!**





**KAEFER S.A., Poland**

## Dionizy Dąbrowski

“This year marks the 40<sup>th</sup> anniversary of my work. I was hired on 23 November 1981 as an insulation fitter. I was prepared for the assignments I was given here. I went from an insulation fitter to a foreman and qualified as a scaffold fitter. A lot has happened during this time and I am glad that I was able to participate in the life of the company. For several years I was able to work in Ireland and France. I am currently involved in the Połaniec construction site. I have always been fascinated by the construction industry and I am proud that I was able to contribute to its development. In the company, I always have the impression that something important and essential is being done. It is so necessary in everyday life.

Privately, I am a happy husband and dad. I have a daughter Katarzyna and wife Renata. I am passionate about nature.”



**KAEFER Industrie GmbH, Germany**

## Curt Glöckner

began his career at KAEFER on 1 October 1981 as a worker – without employment contract, only with a recruitment form. In the course of time Curt Glöckner gained extensive experience on a wide variety of construction sites, such as Norddeutsche Affinerie, Krümmel nuclear power plant, Langnese, HEW Moorburg, Flender Werft, Beiersdorf, Oelmühle, Tiefstack power plant, Texaco, Stade nuclear power plant, Esso, HDW Kiel, Rotterdam, Brokdorf nuclear power plant, Buschhaus, Braunschweig and Esso, Dupeg, HEW Wedel and Helmstedt, Noske Kaeser, DEA Grasbrook, Schümann Sasol and Norddeutsche Affinerie. In 1999, Curt Glöckner successfully completed his training as a site supervisor and subsequently worked for Shell, Esso, the Stapelfeld waste incineration plant and MVA. In 2006 he went to Tiefstack turbine insulation, after which he was involved in the construction of the new GUD plant on the Tiefstack site. During this time, he also handled the HSE and Vera construction sites as well as various other projects. In 2014 he started with KAEFER at Vattenfall Fernwärme – now Wärme Hamburg – where he is still working successfully today. Curt Glöckner is a reliable employee who is highly valued by colleagues and customers.



KAEFER Industrie GmbH, Germany

**Stefan Kraus**



KAEFER Industrie GmbH, Germany

**Rudolf Luhn**



**KAEFER Thermal Contracting Services (Pty)  
Ltd., South Africa**

## Aaron Mahlalela

“I started at KAEFER Thermal on 6 October 1981 as an insulator at Hendrina power station. I then moved on to become a sheet metal worker, being active on various job sites, like Sasol in Secunda, Hendrina, Arnot Powerstation and in Johannesburg. There I also worked in scaffolding as a supervisor, later as a labourer in stores then trained to become a forklift driver.

I moved from Alexandra back to Isando in Elandsfontein and then worked as a scaffolding supervisor. Being back in the stores, I was promoted to senior storeman, that is what I am still doing now. I like my work at KAEFER, because it has given me much. I built my own house, my children finished school and they are working now. I'm happy. 40 years is not a 'pap en vleis', as we say in South Africa, so it's no small feat. It's a long time, I've come so far. I would like to say thank you to my wife as well as to Christine and Daniel for supporting me all these years ”



**KAEFER S.A., Poland**

## Andrzej Majka

“I started working in our company on 3 August 1981 as an insulation fitter at the construction site in Połaniec. I worked on many national projects, such as Połaniec Power Plant, Łagisza, Wrocław. In my long career I was also delegated to work abroad, mainly in Germany and Finland. About ten years ago, as an experienced foreman, involved in the Phoenix project in Połaniec, I was promoted to the position of site supervisor, where I work to this day. The type of work, by its nature, was demanding and required high levels of discipline from the very beginning. Years ago, I made the decision to work here. On the occasion of my anniversary, I can confidently say that I feel professionally fulfilled.

I have a wife, Halina, and two sons, Mateusz and Łukasz. I spend my free time in the garden, and my main passion is taking care of my home plot.”



**KAEFER WANNER S.A., France**

## Dominique Merlet

“On 16 February 1981, at the age of 19, I joined WANNER ISOFI as a scaffolder at the Pauillac refinery for seven years. I then moved to carry out insulation work (cold, PU injection, hot insulation, etc.) in the nuclear and industrial sectors. In 1994, when the SMURFIT KAPPA contract was signed in Biganos, I was asked to take over the management of the site. Wishing to continue my development, I moved to the Blayais nuclear power plant as a level 2 team leader to manage the TEM (Tranche En marche) services. After a few trips to various sites (International Paper, Civaux Nuclear Power Plant, etc.), I returned to the Smurfit Kappa paper mill to manage the scaffolding equipment for the "logiK" project.

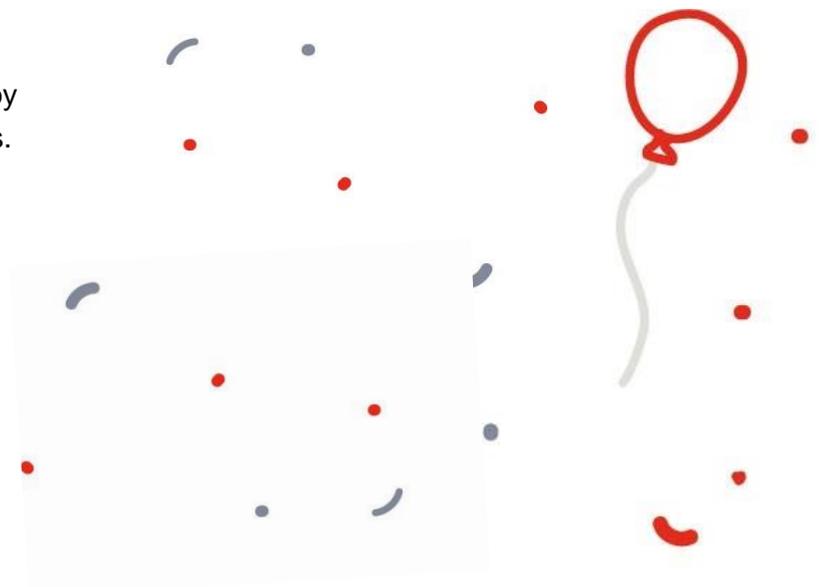
After 40 years at KAEFER WANNER, I still enjoy the pleasant atmosphere among the employees. I'm about to retire, but I'll always have fond memories of the experiences I've had and the people I've met.”



**KAEFER Thermal Contracting Services (Pty) Ltd., South Africa**

## Mbuso Mkhize

“During my 40 years at KAEFER I have been active in various areas and even travelled around South Africa: After starting as an insulator in 1981, I moved on to be a general worker for a while and then worked as an applicator. I was then trained to be a manufacturer, that is what I am still doing now. KAEFER helped me build a home, I got married and had children who have already finished school. When I will have retired, I am planning to go back home and just live my life. When being asked what advice I can give to my younger colleagues, my reply is: Patience, respect and just love what you do, continue till you also reach 40 years.”





**KAEFER Industrie GmbH, Germany**

## Horst Mückschitz

"Aloha KAEFER colleagues!

I can still remember my first day of training at KAEFER on 1 September 1981.

That was at the training centre in Kerpen. When I said at the registration desk that I was from KAEFER, the answer was 'We already know them!' – our colleagues must have left a lasting impression! My training supervisor asked us to show a little more restraint than our predecessors. His technical instructions were excellent, so that we all passed the exam.

My first assembly job was in November 1984 at the Isar-Amperwerke, a new power station in Freising – at minus 25 degrees. Despite very good KAEFER winter clothing it was quite cold! Numerous projects followed, such as ESSO in Ingolstadt, Saarstahl in Saarlouis or Schmitting Behälterbau in Hanover or at the Forsmark power station in Sweden.

When I completed my training as a site supervisor in 1990, I helped to build up the ETW wind tunnel in Cologne and later supervised it for many years as a site manager for repairs and conversions. This was a particularly important project for me, which also included a cryogenic channel for aircraft on the

adjacent DLR site, the conversion of which I helped to manage.

In 1998 I changed from the project business to the permanent construction site. My new place of employment became BAYER Dormagen, today CHEMPARK Dormagen. I never thought I would stay there until today when I took over in February 1999. My current workplace as a self-employed fitter at DRALON in Dormagen has been my second home for over 20 successful years. After my fulfilled professional life, I am very happy about my 40<sup>th</sup> anniversary of service!

My work was more or less my hobby. I had friendly and good colleagues and always enjoyed my work!"



**KAEFER Industrie GmbH, Germany**

## Altan Orman

"I began my apprenticeship as an industrial clerk on 1 August 1981. Even before I finished, I started working in the Industry department as a personnel planner. After completing my military service, I returned to KAEFER. In 1991 I was appointed radiation protection officer and I am also a first aider in the Industry division Bremen. In my spare time I ride my motorbike and practise judo."



**KAEFER Industrie GmbH, Germany**

## Harry Pendzich

"On 1 April 1981 I had my first day at work at KAEFER Isoliertechnik. I was hired for order processing at the Bremen branch, which prepared customer invoices for all the construction sites handled there. At that time the departments were called cold store construction, shipbuilding, industry, interior outfitting, among others.

But I didn't stay in Bremen for very long. After a good year, a commercial employee was needed at the small branch in Oldenburg, and for two years I was something of an "employee for everything" there.

In 1988, I changed to the Industry department in Bremen as a trade clerk. In the time that followed, I developed a feel for contribution margin accounting – that is, making a profit or loss on a project. That was always exciting, even when things didn't go so well.

It was also interesting for me to be sent as a site manager to two foreign construction sites in the Netherlands that were managed by Bremen. Shell Moerdijk in 1992 and ABB Lummus near Rotterdam in 2003 were exhausting but absolutely enriching.

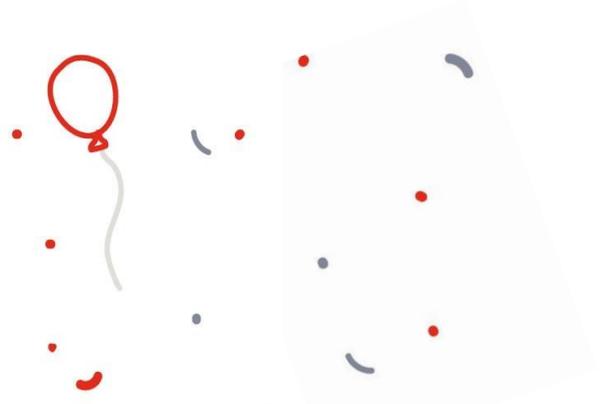
In 2007 the Industry division was merged into KAEFER Industrie GmbH, of which I was a member until 30 April 2021. During this time, I took over the controlling for KAEFER Industrie in Bielefeld, was responsible for noise protection in Bremen and later in Delmenhorst and took care of the Industry locations in Monheim and Gelsenkirchen.

Looking back, I had a wonderful time at KAEFER. My colleagues gave me a lot of support for my job. Only with all of you together have 40 years flown by."



**KAEFER Construction GmbH, Germany**

## Jürgen Pohle





KAEFER Industrie GmbH, Germany

## Marcus Schanze

"I got to know KAEFER in 1979 through a school internship. I started my apprenticeship on 10 August 1981. My talent for sheet metal bending was recognised very quickly and so it was clear that I would join the sheet metal workshop. At that time, this was still in Berzeliusstraße.

From there I moved to the new building in Bredowstraße. After a few assignments abroad (including Norway and the Netherlands) as a foreman, I then changed to the KAEFER Industry department at the Hamburg site in the 1980s.

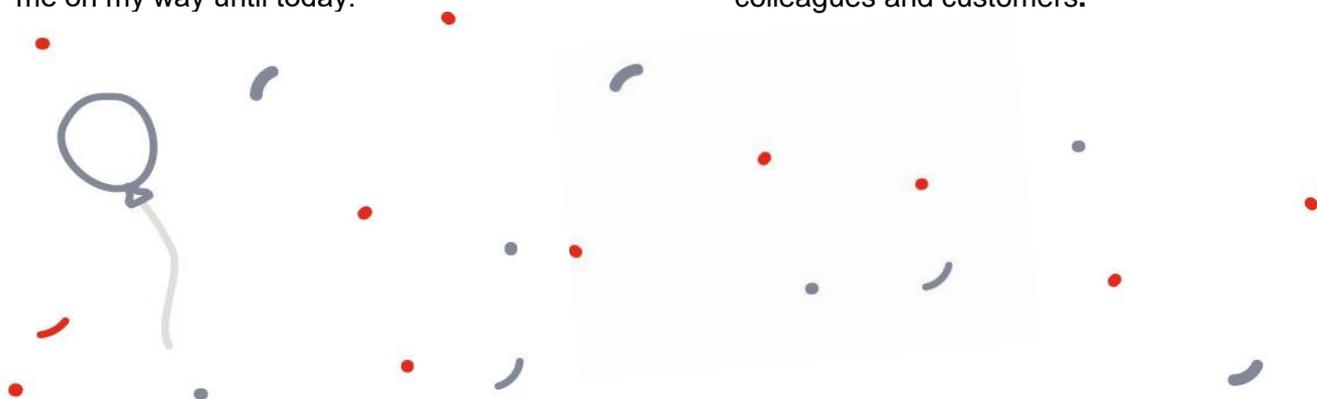
Till today I work for KAEFER Industrie on constantly changing construction sites in northern Germany. Warmest greetings to all who have accompanied me on my way until today."



KAEFER Industrie GmbH, Germany

## Andreas Schmidt

began his apprenticeship as an industrial insulator on 17 August 1981, which he successfully completed. Afterwards, he worked on various permanent industrial construction sites in the Bremen area as a foreman and in assembly. In recent years Andreas Schmidt worked for a long time on various ExxonMobil construction sites in Brake, Steyerberg and the North German Natural Gas Processing Plant in Voigtei as a measurement specialist and cladding fitter. During his time at KAEFER he handled projects independently and temporarily was deputy site manager for KAEFER at the Neag Voigtei construction site. Andreas Schmidt is considered to be very reliable, conscientious, friendly, helpful and very collegial. His friendly nature makes him very popular with his colleagues and customers.





**KAEFER S.A., Poland**

## Jerzy Słota

“I am from the vicinity of Pacanów, a town famous in the stories of “Koziołek Matołek”. I remember my first day as a welder. This work involves great precision and experience, which I have gained at KAEFER. I traveled to foreign projects in Germany and Sweden and faced the new challenges that each construction site presented to me. I mainly was responsible for welding and insulation work. I am currently involved in the construction of Połaniec.

Outside of work, I take care of my small farm. I am passionate about motorcycling and sports. An additional interesting fact is that my son Marcin has also been working at KAEFER for over 13 years as a welder.”



**KAEFER Industrie GmbH, Germany**

## Suat Uzun

began his career in 1981 at Bayer Uerdingen with nine other colleagues. As he always enjoyed his work, Suat Uzun remained loyal to KAEFER all these years and is now celebrating his 40<sup>th</sup> anniversary with the company. He particularly appreciates the good relationship with his colleagues, working in a team and the family atmosphere at KAEFER.

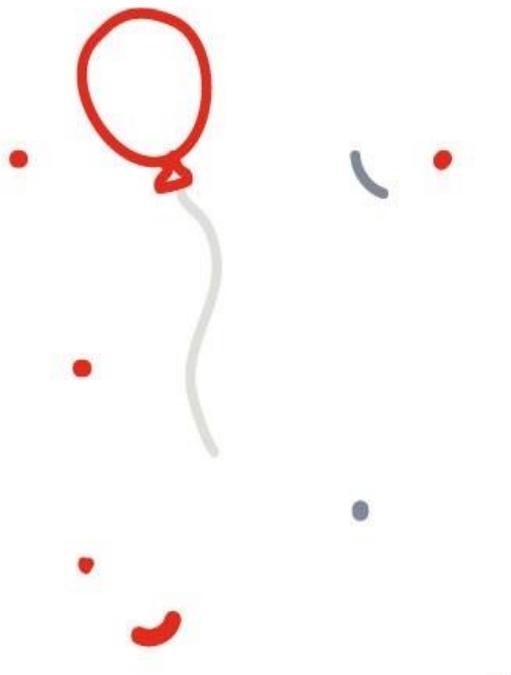


**KAEFER Industrie GmbH, Germany**

## Yüksel Yigit

began his career in 1981 as a fitter in the workshop in Monheim.

After various assignments as a fitter, he worked as a crew leader on various construction sites in Germany and finally came back to Dormagen. From then onwards, he worked there as a contact person in the COVESTRO company of the LDP plant – and still does today.



**KAEFER S.A., Poland**

## Jan Zając

“I live in Tarnobrzeg and I am from the small town of Nowa Wieś in the Świętokrzyskie Province. After graduating from the Integrated Management System in Klimontów, I found out that there was a demand for employees in the newly operating Połaniec Power Plant. Then I directed my steps to one of the companies located in this plant. It happened that there were job vacancies at Termoizolacja (which became part of KAEFER later on). On 12 February 1981 I was hired as a thermal insulation fitter. Reaching 40 years at KAEFER is a moment that makes it worth pausing and looking back. I devoted myself to my work with great passion, improving my qualifications and gaining new skills. I remember many domestic and foreign projects, thanks to which I was able to learn German, for example. I enjoyed managing the work to overhaul the turbine sets of units 2 to 7 in Połaniec. After so many years of working in one company, I feel as if I am a part of it. I am glad that I could develop here.

In my private life, I am a happy father and husband. I have a wife, Jolanta, two daughters, Aleksandra and Gabriela, and a son, Marcin. Gardening is my passion.”

## PUBLICATION DETAILS

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