The GRAF Magazine • Issue 03

GRAF for a

greener planet

Let's get to work!

We at GRAF approach the vision of a better future with every day

Happy Birthday

Learn how Otto Graf invented the first rainwater tank 50 years ago – and what happened next

Sponge city

Urban planners will not be able to go without GRAF solutions in the future

Bonjour, Alsace

Our French neighbours revolutionise the production of rainwater tanks

Yet another way
...to use rainwater in your garden. But here at GRAF we have even better ones in store – in the truest sense of the word. Some of them can be found on the following pages of this magazine

First things first...

»Dear readers, it has been a wet year so far, with weather extremes such as flooding and heavy rain increasing noticeably. Fortunately, here at GRAF we have the right solutions.«

July 2023 to June 2024 marked the period with the most precipitation since weather records began – 140 years ago. Fortunately, here at GRAF we have the right solutions, even for times like these. This latest issue features, for example, how EDEKA Südwest is preparing for extreme weather conditions with roof areas and parking lots in line with the sponge city concept, and what every single one of us can do on a small scale in the long term. We at GRAF are sure of it: our innovations and sustainable products can make a pioneering contribution in the fight against the effects of climate change. This understanding is what drives our day-to-day work and inspires enthusiasm even beyond the GRAF team. On our open day, for example, we welcomed more than 22,000 visitors – a complete success!

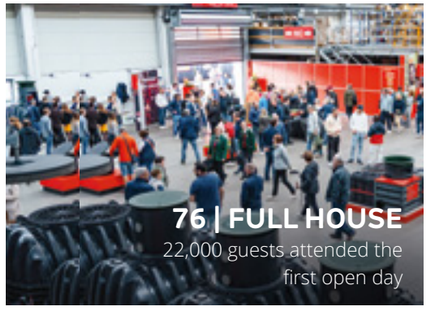
In this magazine, we also have a look at our sites in Australia and France, and reflect on the past – after all, it was exactly 50 years ago that my father invented the rainwater tank – a key moment for GRAF. Learn why a speciality market garden wants to rely on rainwater in the future, and what the perfect water butt for the home garden takes – all of this and more on the following pages...

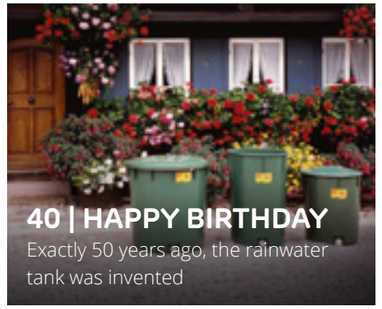
Have fun browsing,
reading and discovering!

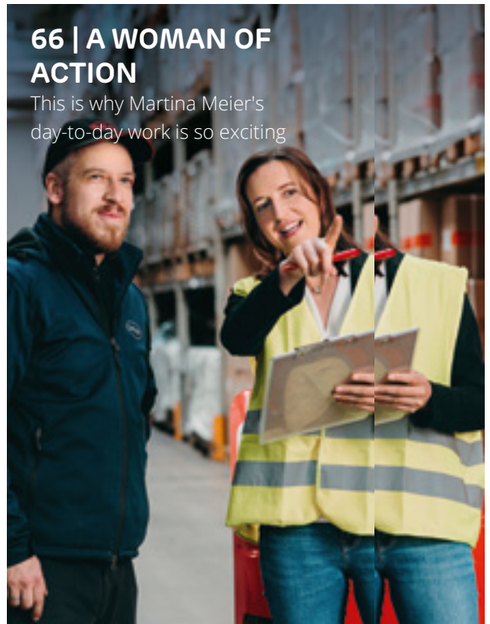
Otto P. Graf
Managing Director

Photos: Benedikt Spether (this page); Galina Ens

Content







Imprint
Publisher: Otto Graf GmbH | Otto P. Graf (authorised signatory)
Carl-Zeiss-Str. 2–6 | 79331 Teningen
www.graf.info | 0 76 41 / 58 9 0

Realisation: Tietge GmbH
Managing Director: Ulf Tietge
Wilhelmstr. 31 | 77654 Offenburg
tietge.com | 07 81 / 91 97 05 0

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Proofreading: Carolin Weisser

Print: Printmedia Solutions GmbH | Weinheimer Str. 62
68309 Mannheim

Photo: GRAF

<< Simple and elegant
Double the convenience with the Natura 2in1 rainwater storage tank (here the colour Sahara) that can serve two functions at once: rainwater harvesting and decoration. Individual design thanks to the integrated planter tray

TEXT: VERENA VOGT

On dry land

Droughts, forest fires, heatwaves: Australia is one of the countries in the world most affected by water shortages. In Perth, GRAF Australia is looking for innovative solutions – that could also benefit Europe

State of the art
At the GRAF plant in Henderson, a suburb of Perth, rotomoulded rainwater tanks with a capacity of up to 100,000 litres are manufactured on an area of 40,000 square metres

>> **Just watering the flowers? In Australia, this can quickly turn into an expensive endeavour.** In the summer months, when temperatures rise above 40 degrees Celsius, water becomes the most precious resource in the driest inhabited continent on earth. In Perth, for example, the capital of Western Australia, strict irrigation rules apply. "Garden owners have to water their lawns or plants early in the morning or late in the evening, or only on certain days – and anyone who breaks the rules risks heavy fines," says David Williams, Managing Director of GRAF Australia, who himself emigrated Down Under with his family for GRAF around nine years ago. "However, if you water with rainwater, the restrictions don't apply – that means that if you have a suitable tank, you have a clear advantage." The fact that rainwater tanks are a matter of course in many places Down Under is not only due to the fact that people there love their gardens. "Due to the climatic conditions, Australians have been masters of water management for thousands of years, and rainwater harvesting has always been an important part of this," says Williams. "We're just working on expanding it."

This is exactly what has been happening at GRAF Australia's 40,000 square metre production facility in Henderson, a suburb of Perth, since 2016. Here, rainwater tanks with a volume of up to 100,000 litres are manufactured in large halls; the plastic materials required for this come from Australia itself or are imported from other Australasian countries. A total of around 50 people are employed in Perth and the three branches in Brisbane, Adelaide and Melbourne.

"Our main question is always: how can we ideally adapt the world-class German products to Australian conditions?" says Williams. Sometimes this means making only minimal changes to a product – but often completely independent products are developed for the Australian market to take account of different soil types and weather factors. "Our most innovative products include the underground tanks. We have developed components that are particularly suitable for flat installations – and therefore perfect for the sandy soils in Western Australia."

Speaking about sand: unlike water, there is certainly no shortage of it in Australia. Around three quarters of the red continent consist of deserts, semi-deserts and steppes, which rarely receive more than 250 millimetres of rainfall per year. It's logical that rivers and lakes regularly dry up in summer here in the outback. With climate change in recent decades, however, the situation has taken on a new dimension – which is now also affecting Australia's heavily populated coastal regions. The country is increasingly being hit by severe droughts, violent bushfires and heatwaves. The strong population growth is putting additional pressure on water supplies. "There is no magic formula for all these challenges," reflects Williams. "But education can bring about real change." He therefore sees it as an important aspect of his work to inform people about the possibilities of rainwater harvesting beyond lawn irrigation. "To use rainwater for flushing toilets or washing clothes: this idea is becoming more and more dominant here, and we may be able to help save a lot of water with this." >>

534 mm

precipitation

per square metre in Australia in 2020 – inland it was less than 250 mm (in Germany: 704 mm)

About a 40%

reduction in precipitation over the next 40 years, according to studies

377 million

Australian dollars

is the average annual cost caused by flooding

Down Under
The GRAF site in Henderson, a suburb of Perth in the west of Australia

Expatriated for GRAF
David Williams has been Managing Director of GRAF Plastics Australia since 2015. Previously, the Welshman worked for many years for a GRAF partner in Great Britain

>> **Despite the general water scarcity, Australia** is also experiencing the other extreme: heavy rainfall and flooding, which are also likely to occur more frequently and more severely in the future. "More than 250,000 new homes are built in Australia every year," says Williams. "This means a large increase in sealed surfaces – and this could be disastrous given the large number of storms we are likely to face in the future," the Australia boss tells us. This is why the EcoBloc systems developed by GRAF in Germany are becoming increasingly popular in Australia to support the infiltration, retention and controlled release of rainwater. When it comes to water pollution, however, GRAF Australia is once again focussing on its own solutions.

"Most of the contamination in this country comes from mining, but also from agriculture and the processing industry," says Williams. The increased emergence of "forever chemicals" (PFAS) is particularly worrying. The potentially harmful substances are extremely persistent and are used in firefighting and aviation, for example, but also in many everyday consumer goods. "Once the soil is contaminated with these chemicals, the process can no longer be reversed – which is turning into a major problem for our water supplies," says Williams. "This is why we developed a new pollutant binding system specifically for Australia, which consists of three elements, including highly specialised geotextiles that capture and contain these substances. This complete solution for preventing future soil and water pollution can be easily integrated into any process."

And these innovations could also be of benefit to us Europeans – after all, studies show that one in five children in Germany already has so many "forever chemicals" in their bodies that critical limits are exceeded. And even if we don't yet have to endure 50 degrees Celsius in summer, the number of heatwaves in Germany are massively increasing . "Australia's weaknesses are ultimately also our strengths," says Williams. In such a large area with many isolated towns, difficult logistics and a microcosm of climate zones, GRAF Australia is literally forced to innovate constantly. "And that in turn has a positive effect on the entire GRAF Group, as we are developing solutions that Europe doesn't even know it needs yet."

»Australia has a bit of everything: deserts, tropics, temperate zones, even snow. This diversity makes us unique – and a pioneer. This means we have to adapt our products to make them work here as well.«

David Williams, GRAF Australia

PHOTO: RAINER LENTZ · TEXT: SYBILLE KUNZELMANN

Between the extremes

How does climate change affect our water? Author and business journalist Uwe Ritzer looks into this question. In this interview, he talks about the effects of extreme weather – and possible solutions

»All in all, there is not less rain, it's just shifting, as extreme weather events such as heavy rainfall and droughts are becoming more frequent.«

Mr Ritzer, we have been regularly experiencing extreme weather events such as heavy rain, floods and droughts for several years now. How is this linked to climate change and how does it affect the water situation in Germany?

The one is closely linked to the other. There is a strong correlation between drought and flood. Climate researchers assume that we will tend to have longer and hotter dry periods in summer and more rain in winter. Another phenomenon that will become more frequent is extreme weather events, in which heavy rain falls on the ground in huge quantities within a very short space of time and can then no longer be absorbed by dried-out soil in summer, for example.

So, overall, there is not less rain?

Not over the year as a whole. The actual question is: can our soils process the masses of water that are coming down, to replenish the groundwater reservoirs and allow us to use the water? On the other hand, this water does not run off on the surface, but floods during heavy rainfall. The water then rushes down the rivers into the oceans, becomes salt water and is no longer available for our drinking water supply.

The figure circulating in the media is that Germany has lost around 20 per cent of its groundwater since 2000. Is that really the case?

It is difficult to give specific numbers here, but there are researchers who have come to this conclusion, yes. Others assume that since 2000, Germany has lost roughly the amount of water that Lake Constance contains. Ultimately, we don't know with absolute certainty >>

This is Uwe Ritzer

In 2023, his book "Zwischen Dürre und Flut – Deutschland vor dem Wassernotstand. Was jetzt getan werden muss" ('Between drought and flood – Germany on the brink of a water crisis. What needs to be done now', Penguin Verlag, 304 pages) was published.

Among other things, Ritzer works as a business journalist and investigative reporter for the Süddeutsche Zeitung

»Rainwater management is one of the major tasks for the future and I agree with that.

I am convinced that technology can be a major key to optimising the management of our water.«

Uwe Ritzer, science journalist

>> because there are still gaps in the recording of the actual groundwater. But one thing is clear: Germany is one of the countries in the world with the greatest water loss.

What can we do?

At the very least, politicians have now recognised the urgency. A national water strategy was initiated back in the days of Angela Merkel, which the traffic light coalition finalised and presented last year. It contains 78 specific proposals, some of which are exorbitantly good. However, when it comes to implementation, the devil is often in the detail. If, for example, a local authority says that rainwater cisterns or service water circuits must be installed in a new development area, then this initially poses a burden for house builders and ultimately the economy. This requires convincing and no doubt incentives – however reasonable the measures may be. In Germany, we are patently working with an extremely high standard. Water was always available for us – 24/7 in every conceivable quantity. Now, we simply have to rethink.

How? Maybe with the aforementioned water storage and rainwater harvesting, where every house builder and garden owner can play their part?

Exactly, but also in larger concepts. For example in urban development, where there are exciting concepts such as the sponge city. I was at an event in Saxony at the beginning of April where the responsible official from the Ministry of the Environment confirmed that rainwater management is one of the major tasks for the future and I agree with that. I am convinced that technology can be a major key to optimising the management of our water and better controlling its use – be it by rainwater collection in tanks or through infiltration solutions that can help the water to be better absorbed by the ground during heavy rainfall, for example. This can open up great opportunities. Incidentally, this also applies to the economy, a key player in this story. That's because we're talking about much larger quantities here. And efficiency, too. And this is what water management entails.

»In Germany, we are patently working with an extremely high standard. Water was always available for us. Now, we simply have to rethink.«

Talking about economy. What challenges will agriculture, drinking water supply, industry and the environment face?

It is assumed that the overall demand for water in Germany will rise sharply in the coming years. This is not so much due to individual households as to the large consumers. Around three quarters of the fresh water required in Germany is used by industry in the broadest sense. The main focus here is on the large energy suppliers and industry. However, it is also estimated that the water demand in agriculture will double. The way we are managing our water right now is therefore not sustainable in the long term. And in the end, of course, the water shortage will affect us all. >>

Lake Constance is beautiful!
Experts estimate that since the year 2000, roughly the amount of water that Lake Constance contains has been lost within Germany – that is around 48 billion cubic metres

»The topic of water does not lend itself to populism. You can't say that the EU should regulate it. At the end of the day, we all have to pitch in.«

>> ***So, what would you like to see?***
Of course, there is no one political button that you press and everything will be fine. The topic of water does not lend itself to populism. You can't say that the EU should regulate it, that the federal government is responsible, or the state or the local authority. At the end of the day, we all have to pitch in. Above all, we need water management, i.e. a system that coordinates, weighs up and sensibly controls all water usage requirements. This is first and foremost a political task that must take place at various levels. A local authority has to be just as active as the federal government.

What else needs to change in your opinion?
Sensitivity. Of the approximately 15 billion cubic metres of water consumed by the industry in Germany – by far the largest consumer – over 90 per cent comes from the companies' own wells. The companies pay nothing at all in three federal states and only marginal cents per cubic metre in the others. This is not an incentive to save water and must change.

It is also important to raise public awareness of this issue in order to get things moving. How can this be achieved?
I have noticed that awareness of the issues has enormously increased recently. There are more media reports centred on the topic of water use. We are also slowly but surely feeling the effects of the exception. Even last summer, a water emergency was declared in 40 districts. The drier our next few years become and the longer these dry spells last, the more frequently such cases will occur and the greater the public awareness of the issue will be. Fortunately, there are people who go to events, get involved and provide information. Ultimately, my book "Zwischen Dürre und Flut" (Between Drought and Flood) also aims to make a contribution to giving the topic the importance it definitely has.

Does this mean that we won't be able to avoid the issue in the next few years anyway and will be forced to take it seriously?
Exactly, it's not like with gas or electricity. When it comes to heating or electricity, there is always an alternative. If I don't want my electricity from a nuclear power plant, I can get it from renewable energies. If I have a gas or oil heating system, I can choose a different energy source. There is no such alternative for water. You have it – or you don't. That is why I feel the need to emphasise that water must remain a common good that benefits us all. For me, this is the basis for all further considerations, strategies and measures, which will hopefully go in the right direction and have an impact.

20%
of **groundwater** has been lost in Germany since 2000.

128 litres
are consumed by one person in Germany per day.

Two-thirds
of the earth
is covered by water.
However, less than three per cent of this water is drinkable.
If you subtract polar and glacier ice, we are left with 1 per cent of drinking water.

40
counties
had to declare a water emergency in 2023.

TEXT: SYBILLE KUNZELMANN

It's not a game of cat and mouse

In NASA's GRACE mission, the two satellites Tom and Jerry reveal the state of the groundwater on Earth – which is not very good. What can we do? Use the resource more carefully...

»It takes a great number of experts and very powerful computers to get usable results from the satellite data.«

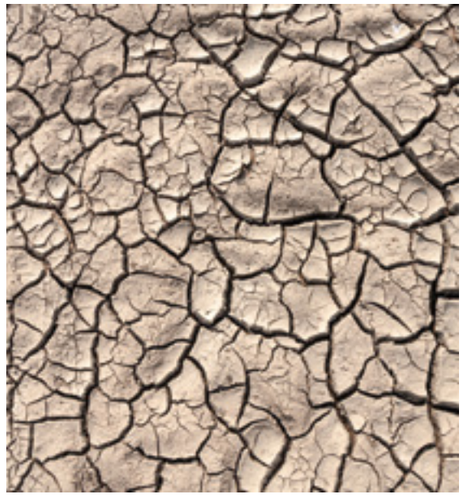
Imagine it's the height of summer, 35 degrees Celsius in the shade and – in the middle of Germany – you have to make do with two small bottles of water a day. Making coffee, showering or doing the laundry is out of the question. Desperate people wait in makeshift camps for their daily water ration. Violence and mistrust are part of everyday life. At the same time, the fire brigade is fighting forest fires with the last of its strength – and resources. The flames spread faster than a person can run. Not a trace of rain.

In the summer of 2022, when a few municipalities already had to turn off the tap, the dystopian scenario from Wolf Harlander's novel "42 Degrees" became a rudimentary reality for some people. Heatwaves, droughts and forest fires have now become commonplace in real life as well. And even the greatest optimists, who hope that everything might change for the better overnight, are presented with hard facts by the data analyses from Tom and Jerry. Tom and Jerry – these are the names of the satellites used by a scientific team from Graz University of Technology and the German Research Centre for Geosciences in Potsdam to keep an eye on groundwater levels from space.

"We are definitely experiencing problems with the water supply here, so we need to think about that," says Professor Torsten Mayer-Gürr from the Institute of Geodesy at Graz University of Technology, summarising the evaluations of the data for the EU G3P project so far. In collaboration with the GFZ Potsdam and six other partners across Europe, the team is investigating large-scale changes on Earth, particularly in the context of climate change.

Tom and Jerry jet around the Earth 15 times a day at a speed of 30,000 kilometres per hour and at a distance of around 200 kilometres from each other and, with 500,000 measurements per month, provide a wealth of data on the Earth's gravitational acceleration**.** Scientists can draw conclusions about global groundwater resources from the change in their distance from each other. This is how it works: when a satellite flies over a region with increased gravity, the earth slightly pulls it in, increasing the distance to the other satellite. Above the Alps, for example, gravity is stronger than in the Hungarian lowlands. Once the satellite leaves the high-mass region, it slows down. The data collected allows for the compilation of informative global gravity field maps. >>

Photo: Adobe Stock asri80



Water shortage, drought and forest fires
...will increase in Germany in the coming years. Just how scarce our water really is has been revealed by the NASA satellites Tom and Jerry, currently analysed by Prof. Dr.-Ing. Torsten Mayer-Gürr (on the right)

»Above all, we have to learn that water is a finite resource.«

>> **"It takes a great number of experts and** very powerful computers to get usable results from the satellite data," Mayer-Gürr explains. The first step for his research team is to simulate a satellite orbit, taking into account the known forces such as the gravitational pull of the sun, moon and planets, changes in mass, friction and the radiation pressure of the sun, to name just a few parameters. In the next step, the experts compare the model with the actual measurements and improve it until it matches the measurements. Every month, the team updates the gravity field map with 15,000 unknowns using half a million equations.

Around 20 years ago, GRACE – which stands for Gravity Recovery And Climate Experiment – began as an experiment. It was only after the start of the project that the researchers discovered what they could observe with the spacecrafts: namely all water changes on Earth. This data is now indispensable for climate research.

In order to investigate the fluctuations in groundwater gravity over a specific region in Germany, scientists led by the GFZ in Potsdam are cooperating with the team from Graz University of Technology, the universities in Bern and Zurich and other project partners. Based on the basic mass data provided by the experts from Graz, the researchers deduce mass changes in rivers and lakes as well as soil moisture data, snow and ice. In this way, conclusions can be drawn about the quantity of groundwater.

Dr. Eva Börgens from the German Research Centre for Geosciences already demonstrated in 2020 that there were significant signs of water scarcity in Europe in the summers of 2018 and 2019. Since then, the groundwater levels have remained constantly low. "Although 2023 was a relatively wet year and the topsoil is moist again, the groundwater has not yet regenerated," says the expert, adding: "The decline in groundwater makes us more vulnerable, meaning that droughts get worse much more quickly."

Although the data from the GRACE satellites use a relatively coarse grid, they still reveal regional differences. For example, according to a report by National Geographic, there is a particularly pronounced decline in water levels in the area around Lüneburg, as well as in parts of Baden-Württemberg and Bavaria. Nevertheless, the GRACE satellites show the whole of Germany in red, which means that the water reserves in this country are generally declining year after year.

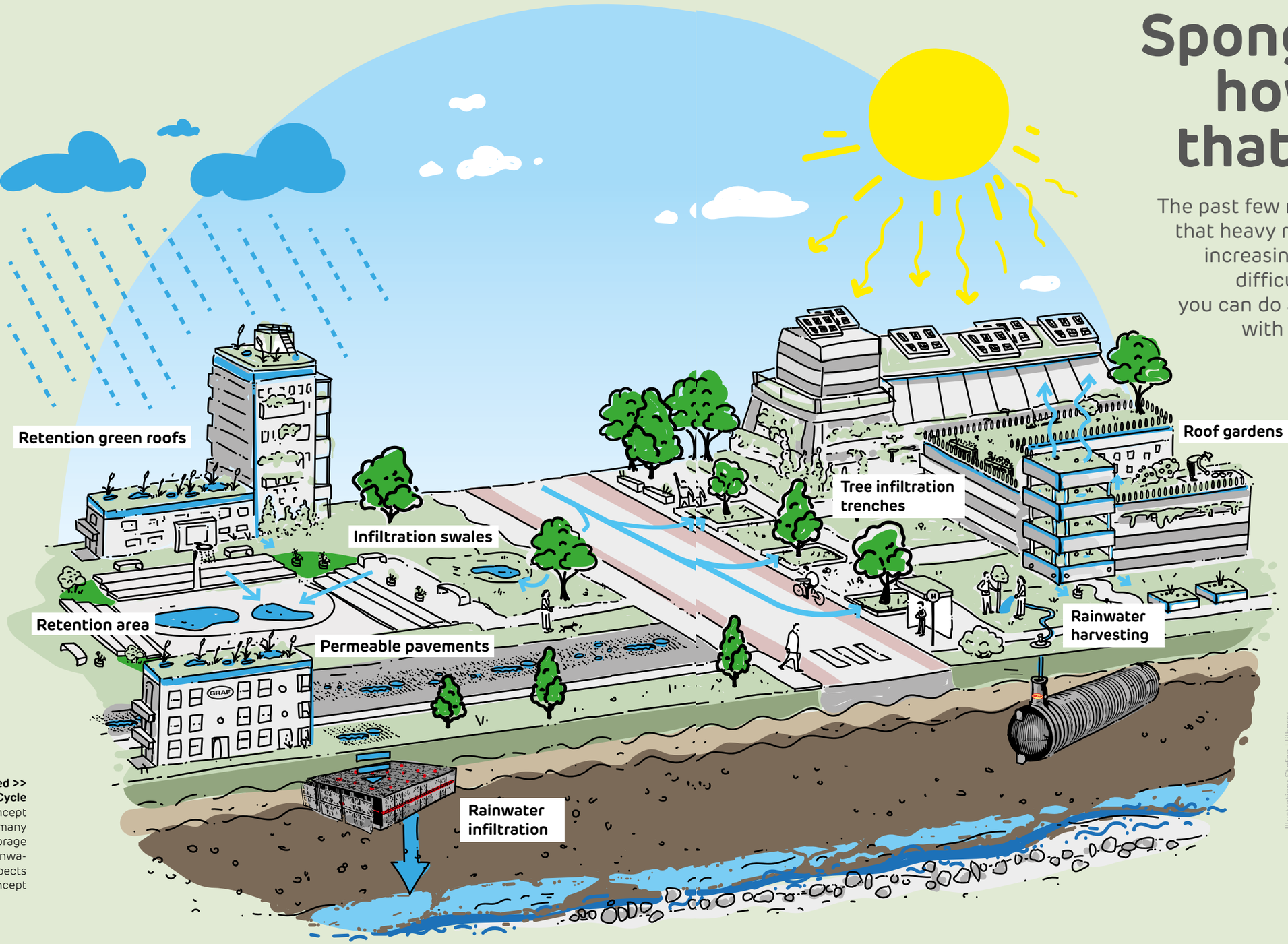
Incidentally, Germany is geographically located exactly on a border: The northern latitudes are becoming wetter due to climate change, while the southern latitudes are drying out. According to the NASA/DLR GRACE mission, the development in Germany is similar to the droughts in the southern parts of Europe, which have also become increasingly dry over the past two decades and have also significantly favoured natural disasters such as forest fires and heat waves. Why is that? Dr. Eva Börgens explains it like this: "Intense heavy rainfall, which is intensified by climate change, causes large amounts of water to run off quickly and end up directly in rivers and lakes instead of seeping into the ground." This rapid runoff prevents the water from effectively reaching the groundwater, where it could be harnessed by nature, and at the same time increases the risk of flooding and erosion. In addition, more and more reserves are being pumped out in some parts of the world. "In order to keep the groundwater level constant, as much would have to be added as is extracted," explains the scientist. Unfortunately, this calculation does not work out.

Can we still turn the tide? "Above all, we have to learn that water is a finite resource," summarises Eva Börgens. In her opinion, we also need to prepare for change in Germany. As it is predicted that there will be more winter and less summer precipitation, solutions need to be developed and implemented to store the water from the rainy months. For example, with rainwater tanks or clever sponge solutions. Or – thinking even bigger – with dams or similar concepts. So there is a lot to do...

TEXT: STEPHAN FUHRER

Sponge city, how does that work?

The past few months have shown that heavy rain and flooding are increasingly making our lives difficult. But there is a lot you can do about it – especially with solutions by GRAF...



Sophisticated >> Cycle
The sponge city concept comprises many elements. The storage and infiltration of rainwater are essential aspects of this concept

Illustration: Stefan Hilberer

Sponge City
In Asia, cities such as Singapore – in the picture the green façade of a hotel in the megacity – or Chinese cities have been pursuing the idea of the sponge city for years. In Germany, this development has only just begun...

Expert on duty
Prof. Dr. Carsten Dierkes works as a consultant to associations and companies when it comes to water management and also supports GRAF in product development. He has also been a professor for water management at the Frankfurt University of Applied Sciences since 2011

A sea of infiltration ditches
The plastic hollow bodies are often structured in several layers, depending on the stability requirements. In the end, the structures can easily withstand trucks weighing up to 60 tonnes – with a working life of over 50 years

Photos: Pascal Oertel; GRAF; Ivan Kurmyshov / stock.adobe.com

»The situation is that our municipalities are still far from being prepared for these extreme weather events, and many have not even attempted any preparations at all.«

Floods in Saarland, floods of the century in Swabia and Bavaria: the current year has been anything but dry so far. Withered fields, parched forests and dried-up riverbeds – everything we have come to know and fear from the past very hot years has turned into the complete opposite this year. But this hasn't made the overall situation any better. In 2024, farmers are again complaining about serious crop failures – this time due to wet conditions. Numerous severe storms and floods have not only caused billions in property damage, but also many injuries and some deaths. The increasing number of heavy rainfall events is also causing major problems for cities...

"Unfortunately, the situation is that our municipalities are still far from being prepared for these extreme weather events, despite a few flagship projects, and many have not even attempted any preparations at all," says Prof Carsten Dierkes, an expert in rainwater treatment from Münster. That being said, the urgency has long been more than obvious. All too often, sealed surfaces cover far too much ground and the classic drainage systems are not sufficient to absorb and drain off the huge volumes of water that pour down in a very short space of time.
It is not for a lack of innovative solutions or targeted concepts –those had long been available. "In future, we'll just have to think about and plan for them immediately during construction work," says the expert, who also advises GRAF on product development.

The big keyword here is the sponge city concept**.** It is based on the idea that in future, water will no longer be drained away, but will instead be retained and either seeped away in a controlled manner, stored or reused right where it falls. In this way, the city virtually becomes a sponge with numerous small reservoirs; evaporation is another factor. All of this goes hand in hand with a variety of other measures: more green spaces and plantings – including on rooftops, for example with the recent "retention roofs" or "blue green roofs", which feature a water reservoir underneath the vegetation layer – as well as tree trenches, photovoltaic systems and more.

"Either way, the concept requires large volumes of rainwater storage in the cities; after all, we don't just need storage space, all the greenery also needs enough water in dry times," explains Dierkes. And that's where the cycle closes again. According to the expert, the sponge city is not just about heavy rainfall, but about climate change as a whole – including droughts.

>>

»Often, the soil is so dry that even the green spaces cannot absorb the rain.

This is no problem with infiltration trenches. Water can be seeped into the ground in a controlled manner or retained – or both."

Prof. Carsten Dierkes, expert in water treatment

>> **Large tanks are needed both for larger objects,** where containers with a capacity of 100,000 litres and more can be installed, such as those produced at the GRAF plant in Neuried, as well as for the many smaller ones and for the planning of urban green spaces: "The amount of rainwater storage makes the difference in the end. This also includes the many family homeowners," says Dierkes. However, he also believes that more political support is needed here, for example by reducing the bureaucratic effort or in the form of subsidies.

Another key component of the sponge city concept is the use of infiltration trenches, i.e. hollow plastic blocks that can fulfil several functions when laid in the ground over a large area: "These elements can be used purely as infiltration systems," explains the expert. The water is gradually drained into the groundwater. On the other hand, the buffer tanks could also be used for partial infiltration only and additionally for rainwater storage.
The big advantage during heavy rainfall: large quantities of water can be quickly absorbed on areas equipped with infiltration trench systems and correspondingly water-permeable surfaces. According to Dierkes, the type and dryness of the soil then no longer matter. "After all, a common problem is that the few green spaces in the cities are so dried out that the large amount of water cannot be quickly absorbed during heavy rainfall." This is no problem with underground infiltration trenches, and the products from the GRAF portfolio even fulfil a second sustainable function: They are made 100 per cent from in-house recycled plastic. Anyone who uses this method to allow excess rainwater to seep away not only makes an important contribution, they can also save on rainwater charges – and this applies not only to companies, but to house builders and renovators as well (after all, rainwater harvesting systems and retention measures can also be retrofitted to existing buildings).

"The near future will see even more innovations for even greater efficiency and benefits," says Carsten Dierkes about a GRAF product that will soon be available: the "hose squeeze throttle", a particularly smart and powerful throttle that will ensure ideal characteristic curves in rainwater collectors and in turn an optimum outlet volume flow. This sounds complex to non-techies, but it is just one of many small, sophisticated pieces of the puzzle that ultimately make up the big picture – to a life in our cities that is as carefree as possible when it comes to flooding...

Would you like a dimensioning free of charge?
Are you planning for a rainwater infiltration solution and save on surface water drainage charges? GRAF offers both end users and professionals free dimensioning of infiltration and retention systems. More information at infiltration.graf.digital

This QR code gets you there even faster:

PHOTOS: DIMITRI DELL · TEXT: SARINA DOLL

Vive la France

Dachstein belongs to GRAF like the stork belongs to Alsace. We reveal, what distinguishes the French site from its Baden neighbours and what the large tanks have to do with chocolate

<< Old meets new
This is what it looked like back then: the first GRAF building at the Dachstein site in the year 1978. The picture below shows an aerial view of the current plant with a footprint of more than 200,000 square metres

»The customs barriers back then were closed, so you couldn't just cross the border with a few products as samples.«

"What do water butts and chocolate have in common?" Gaël Hahn sees confused faces. People shrugging. Nobody knows where the plant manager of the French GRAF subsidiary is going with this question. After all, we are in a production hall for plastic tanks. Gaël Hahn sheds some light on the matter: "GRAF tanks are created in the same way as chocolate eggs at Easter or chocolate Santas at Christmas – via rotomoulding." So let's take a closer look...

...and we soon find ourselves in front of an almost historic piece of company history, as Gaël Hahn explains: a rotomoulding machine that is unique in Europe. GRAF expanded into France in 1970. It was the first location outside Teningen. Otto F. Graf, who had always been fond of France, made the logistically clever decision to set up a sales office in Alsace, which he established together with his friend Charlot Farny. "The customs barriers were closed, so you couldn't just change countries with a few products as samples," reports the senior boss. So he sold to Charlot, who set up the sales organisation in France. At that time, nobody could have guessed that a large production facility would be established in Dachstein, France, in the same decade, turning the GRAF retailer into a manufacturer for the first time.

Today, more than 2000 different GRAF products are manufactured in Dachstein using injection moulding and rotomoulding. The rotomoulding machines rotate 24 hours a day, up to seven days a week. An employee fills a new mould with a plastic powder. On average, 50 tonnes of material are used every day – just as much as for the injection moulding process in the adjoining hall.

Now the rotomoulding machine turns like a carousel into an oven, where the mould is heated to around 280 degrees Celsius. Then the procedure that names the entire process starts: rotation. As the mould slowly rotates around several axes, the powder melts and adheres evenly and without stress to the inner wall of the tool.

>>

New in office >>
Since the beginning of 2024, Gaël Hahn is plant manager in Dachstein. He had previously been Production Manager

1978

The French GRAF subsidiary moves to its current location in Dachstein and manufactures products using rotomoulding for the first time

10 000

tanks

are kept in stock at the Dachstein plant for immediate delivery

17 000

trucks

visit the GRAF courtyard in Dachstein on average per year

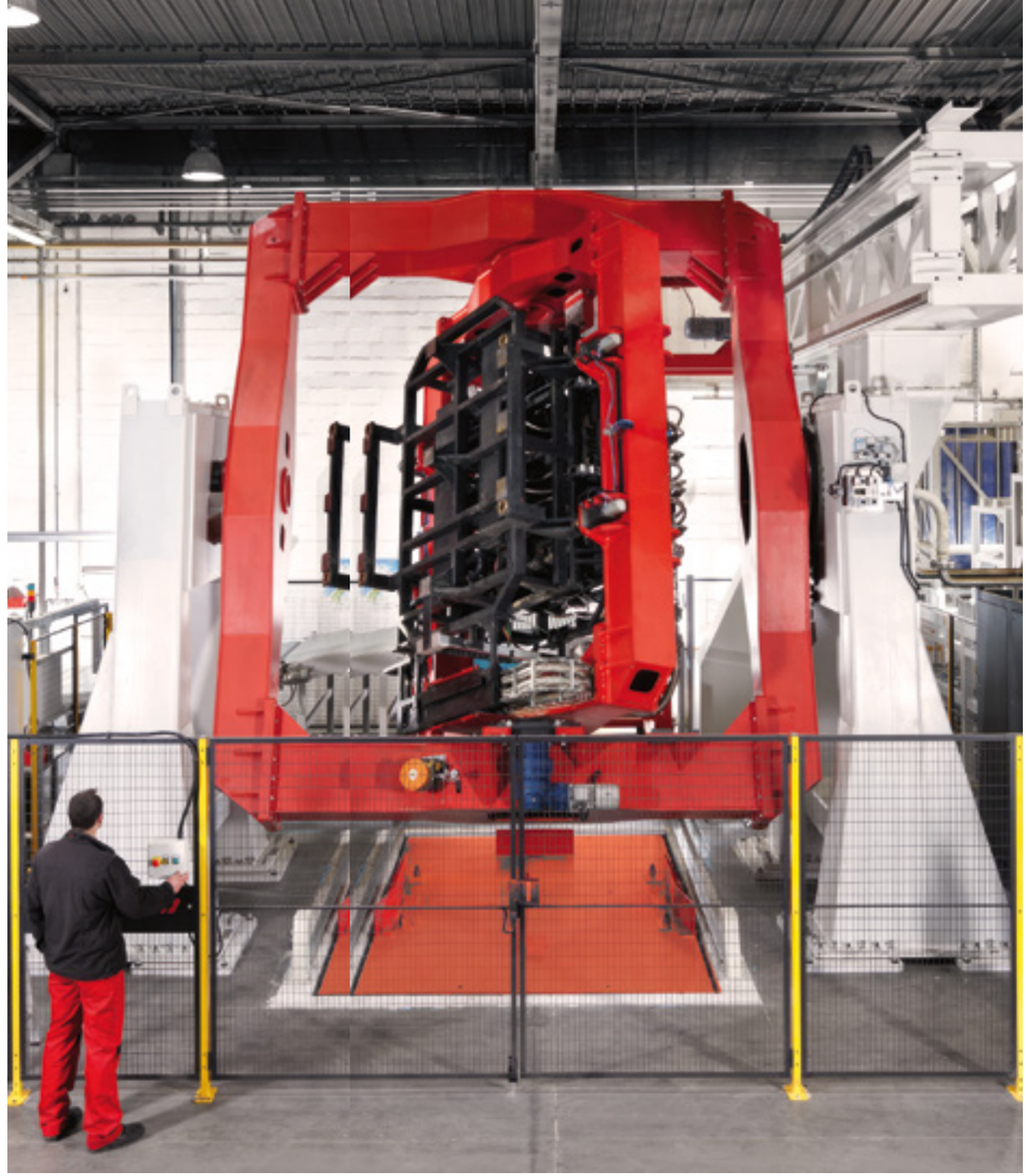
>> A rainwater tank is produced. "One tank comes out of this machine every 28 minutes. We are currently producing anthracite-coloured pieces from the antique range here," explains Hahn, as the machine continues to rotate. Then, only protruding edges are removed with a tool by an employee and the connection opening is drilled in – and that's it.

GRAF now has six such rotomoulding machines in Dachstein, which are kept running by 40 of the total of 100 employees on site in three shifts. Some of the machines work fully automatically at the touch of a button and are quite unique.
Allow me? Leonardo!

This is what the latest rotomoulding machines are affectionately known as, which are less reminiscent of a carousel and more of a time machine. Only one tank per appliance is produced at a time, which is also moulded by rotating movements. >>

Peeled from the shell
Here, a seamlessly manufactured flat tank is freed from the mould half in which it was produced by rotomoulding

High tech à la GRAF
The sturdy universal round tanks are customised with laser branding



<< Allow me: Leonardo
The modern rotomoulding machine works fully automatically and is unique to Dachstein

Dominique Lacombe
He has been in charge of the French market as sales manager for 32 years

Dachstein
The municipality of Dachstein in the French Département Bas-Rhin is located around 30 kilometres west of Strasbourg and is not to be confused with the glacier in Austria. The medieval village has around 1800 inhabitants and has been home to GRAF France since 1978.

>> The powder automatically trickles into the mould without human intervention, is heated thanks to hot oil flowing through the many pipes around the mould and then left to cool. After a good hour, the bottom of the machine finally opens like a UFO and out comes a platin tank with a capacity of an impressive 5000 litres.

GRAF stores around 10,000 tanks in Dachstein alone, ensuring constant availability for its customers. The site serves as the hub for the French market, meaning that the whole of France is supplied with water butts, composters, tanks and the like from here. As the market leader in our neighbouring country, Dachstein is the GRAF Group's largest and best-selling subsidiary. One of the reasons why this works so well is the close communication with Teningen, Herbolzheim and Neuried. "Four companies within an hour's drive: that really is something special. But even though GRAF is such a large company, I really appreciate the homely atmosphere," says Hahn. Managing Director Otto P. Graf, for example, spends time in Dachstein every week, greets people in the corridors with a casual Bonjour and holds meetings in fluent French – as a matter of course.

And yet, even though the French site works so closely with Teningen, Herbolzheim and Neuried, there is still room for its own innovations. Every country has different needs and requirements – that is well understood. And so GRAF France is currently focussing on the topic of waste water.

"Unlike in Germany, 20 per cent of the French have a decentralised wastewater system," explains Dominique Lacombe, Sales Manager for France. To offer an alternative to GRAF's electrically powered small wastewater treatment plant, another product was launched in 2024: the easyCompact small wastewater treatment plant without electricity. "Many people in France, for example, have their own holiday homes, so they need reliable systems. >>

The GRAF Academy
In the Dachstein showroom training courses for GRAF customers are held

>> We have high hopes for this market," says Dominique Lacombe, who has been working for GRAF for 32 years.

To explain new products like these to its customers, Dachstein has also had an academy for around two years. Until recently, Dachstein was therefore an important step ahead of the locations in Baden. Once a week, training courses are held in the showroom and the workshop below for GRAF customers to familiarise themselves with and better understand products, functions and technical details.

"It was worth it. Now, we can show our customers not only the production facilities, but also answer all the questions they need for customer advice," says Dominique Lacombe. This puts them one step ahead of many GRAF locations...

»For a good 50 years, GRAF tanks have been produced by rotomoulding. Today, the Dachstein factory produces more than 2000 different GRAF products that are supplied to all of France from there..«

Gaël Hahn, Dachstein Plant Manager

TEXT: SARINA DOLL

Happy Birthday, water butt!

From pioneer to global market leader: Exactly 50 years ago, GRAF launched the first water butt on the market – a nice coincidence, to which the company owes a great deal. A homage…

<< A touch of nostalgia
Three of the first GRAF tanks, photographed in the 1970s. They were the first in the world to be made of plastic. The idea came to company founder Otto F. Graf by chance…

»Back then, plastic was on the rise. Little by little, the old wooden and sheet metal things were replaced, and I thought: that could be something for me.«

Rainwater costs nothing. With this slogan, GRAF advertised the very first plastic water butts, which the family business launched on the market exactly 50 years ago in Teningen. The goal of inventor and company founder Otto F. Graf: to make use of the many hundreds of litres of rainwater that fall from the sky per square metre every year in this country. This is why the current senior boss himself buried his first rainwater system 50 years ago, which still supplies the Graf family's garden with rainwater today. The GRAF water butts were actually a product of chance. But let's start from the beginning...

The basic idea of a water butt was nothing new: people were already collecting rainwater and using it to supply water in the Middle Ages and in ancient times. The idea of using a barrel (back then still made of wood or sheet metal) for this purpose finally emerged in 1874 and was immediately patented: it was the birth of the water butt. The barrel as we know it today was developed exactly 100 years after the first patent, when Otto F. Graf entered the scene and revolutionised rainwater harvesting with the first plastic water butt. "Back then, plastic was on the rise. Little by little, the old wooden and sheet metal things were replaced and that's when I thought: that could be something for me," he remembers.

However, after founding Otto Graf GmbH in 1962, he initially sold winery products. To this end, he cleared out the barn behind his parents' house in Emmendingen and began selling tubs for grape harvesting and later plastic wine barrels.

Together with his wife Elfriede, the young businessman invested up to 100 hours a week in his business and kept coming to the bank to ask for a new injection of funds for further expansion. One day he decided to also accept second-choice barrels, which he obtained from Bötzingen. "Not for the cellar, but for rainwater," he says. At the time, he could not have foreseen that this idea would eventually make him the market leader for rainwater harvesting products.

All it took was one step more: innovative rotomoulding machines that were unique in Germany and transformed Otto Graf GmbH from a dealer into a manufacturer in the mid-1970s. In order to utilise the machines to capacity, Otto F. Graf now started >>

<< Everything back to square one
In 1962, Otto F. and Elfriede Graf founded Otto Graf GmbH in Teningen. Initially, they sold plastic containers, barrels for fruit and wine growing, and industrial containers.

High tech
How water butts are manufactured at GRAF today

Photos: Otto Graf archive

»Half a century after Otto F. Graf invented the first water butt, GRAF offers its customers 95 shapes, colours and sizes.«

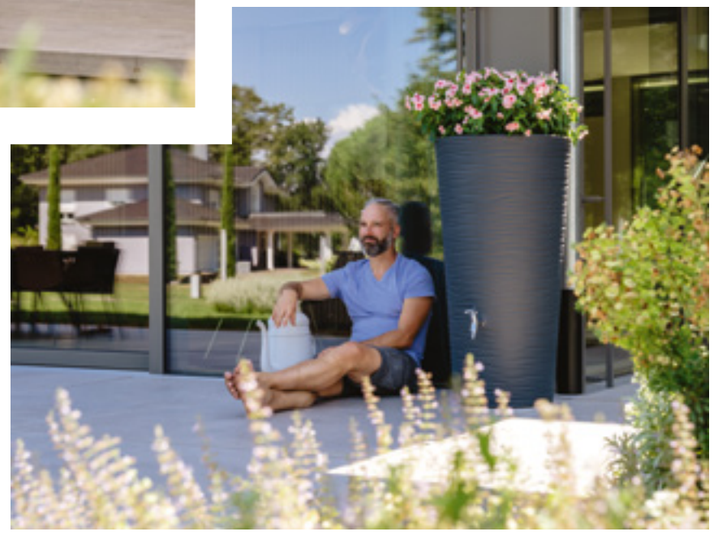
>> his own water butts. This is how the success story began!

From now on, GRAF rapidly grew and expanded. In 1990, the largest rotomoulding machines in the world were already in operation at GRAF in Dachstein, Alsace. Otto F. Graf came up with a groundbreaking idea during a family breakfast in a Swiss chalet: "Why not design rainwater tanks so that they are stackable, like yoghurt pots?" This consideration led to the development of the Herkules tank with its 1600 litre capacity in 1997. The Herkules tank consists of two half shells that are connected by a patented system and radically revolutionised the logistics of rainwater tanks – from five to fifty tanks per truckload.

When Otto P. Graf Jr. joined the company in 1996, the topic of recycling also gained momentum: GRAF water butts are now partly made from 100 per cent recycled yoghurt pots or chip bags. "At our competence centre in Herbolzheim, we filter the plastics for our products from waste," says Otto P. Graf. One of the most modern recycling plants in the world is located here, which sorts and processes the plastics to produce a recyclate – a valuable raw material, more than 70 per cent of which is already used in GRAF products – and the trend is rising.

Processing and recycling saves 100,000 tonnes of CO_2 emissions per year compared to the use of new raw materials. This is equivalent to the annual emissions of 60,000 cars. But GRAF is not only sustainable in terms of production: its rainwater storage tanks save around 300 million litres of drinking water worldwide every day – that corresponds to the needs of well over two million people in this country. >>

Simple design >>
The Nordic rainwater storage tank is made from 100 per cent recycled plastic in a simple Nordic design. It is connected via a Speedy rain collector, including a filter (see below)



^^ Wood or plastic?
The Barrica rainwater barrel, made of 100 per cent recycled plastic in the shape of a rustic wooden barrel, has a deceptively real-looking wooden structure

<< With planter tray
The Natura 2in1 rainwater storage tank in graphite grey features a unique wave-shaped surface structure. It comes with a tray that can be planted individually

vv Tank on the wall
With the GRAF wall tank, rainwater collection is space-saving and child's play

Perfectly beautiful
Available in a wide variety, the 2in1 rainwater tanks with their different surfaces are particularly versatile and can also be used as decorative planter trays, (top left in Tomato, top right in Lava, bottom right in Arctic)

<< Large storage volume
The Cubus garden tank (far left, here in concrete grey) has a capacity of 1000 litres

>> "We really must work hard for our planet," says Otto P. Graf. The design of water butts also evolved over the past 50 years. What began with the classic green water butt has now evolved into 95 different shapes, colours and sizes. Today, customers can choose between classic rainwater storage tanks or wall tanks and customise many containers thanks to the integrated planter tray.

Half a century after Otto F. Graf invented the first water butt, the family business has evolved into a world market leader. GRAF's innovations now extend beyond water butts to include underground tanks, XXL tanks with capacities up to 122,000 litres, and systems for rainwater infiltration and retention. It's a true "water butt reloaded" story. And the excitement continues, as GRAF is already working on the next wave of innovations...

PHOTOS: JASMIN FEHNINGER · TEXT: PASCAL CAMES

Even Meergrun- Sea Green- sometimes needs rainwater

Enrico Marklowsky's specialty market garden in Grunern, southern Baden, is known for its variety of perennials. And even though the location is ideal, sometimes a little extra water is needed

His beautiful garden
On the left, two bearded carnations are blooming, as they used to in every country garden. They are a feast for the eyes, for beautiful bouquets, and for wood bees and other insects. Top right, Enrico Marklowsky peels a young bamboo, which is edible. On the left, a dwarf ivy climbs up the tree, which is absolutely rare in nature. Because it grows too slowly, it is overgrown by normal ivy

Enrico Marklowsky turns around and says: "There was nothing here!" 24 years later, there is quite a lot here. On the half-hectare site in Grunern near Staufen, 2000 different plants share the space. The Meergrün (sea green) market garden is dedicated to diversity and rarities. Anyone in South Baden, the home of GRAF, looking for Szechuan pepper, rare apple varieties or Japanese ginger does not need to travel to southern China or Japan. The Meergrün market garden may have it. And oregano, mint, sea buckthorn, sage and thyme to boot. They might even be a little bit tastier than anywhere else...

When Enrico Marklowsky and his Swiss-born wife Renate Gyger arrived here 24 years ago, there was only wild growth and the forest. The forest still stands, but the scrubland has become a sought-after market garden. Bamboo grows as tall as trees in the market garden and, as you would expect, there are vegetable patches, a greenhouse, orchids and much more. Meergrün is a perennial nursery. "It's more of a generic term," explains Enrico Marklowsky. "It goes from to," he says, referring to plants that need a lot of water to those that love drought. "The variety is too great for me to standardise," he says when asked about irrigation. As he prefers not to limit himself, he first had to see what was growing here. In Grunern, he discovered heather and rhododendron (alpine rose), both evidence of pH-neutral soils "on which anything can grow". He needs that for variety, which he aims for.

At first glance, the market garden appears to have been created by Peter Lustig. The wooden boards are charming and the colours are pleasing to the eye. There is a small shop in front with kitchen herbs or seasonal berries. In the market garden there is a greenhouse with Ratz and Rübe, two tortoises that have accompanied him since childhood. Beds of beans and cabbage stretch out towards the forest, and at the top there is a meadow and a woodland garden where plants that need little sun grow in the shade. It's five degrees cooler here.

And it's all too clear: all the greenery obviously needs water. Plenty of that! A challenge for any gardener, whether professional or amateur – especially if there are large plants in the garden, as the expert explains. "The trees compete with the plants for water." Which means much more water is needed.

It takes some thought to find a solution that ensures that the well water doesn't get too expensive in the densely overgrown garden and, in the worst case scenario, the plants die. A solution like, for example, a water tank to collect rainwater. "Rainwater is the best," says Enrico Marklowsky. He wants to use it to bridge the dry spells, which fortunately don't hit him quite so hard. A stream passes through and the Black Forest also radiates coolness. The city water comes from the Münstertal valley and is ideally soft. "I'm a lucky man." However, when the springs in the Münstertal dry up, other water is channelled in that contains lime – which is less optimal. And some plants are quite sensitive. Plus, the lime stains on the plants when he irrigates them with a mist nozzle are not exactly pretty either. "Not all of them can tolerate that," he says. That's why a tank for soft rainwater in the garden cannot hurt, even if the tap water is still good in some regions, says the professional.

The question remains as to how the market garden got its unusual name. "Meergrün" – sea green? The story goes like this: In the 1980s, a young lad left his home in Schleswig-Holstein to study horticulture at the Royal Horticultural Society in the English county of Surrey. Every month he was allowed to go to London for an orchid show. He really liked that. In 1997, he became plant manager at the Gräfin von Zeppelin perennial nursery in Sulzburg. After that, he went back to the north to set up a market garden, only to return to the south a short time later. With him, he brought the name. As you could still see the sea from the old location, he called it "Meergrün" – sea green.

PHOTOS: PASCAL OERTEL · TEXT: VOLKER SIMON

Supermarket of the future

EDEKA Südwest sets new standards in terms of sustainability and innovation. The e-centre at the headquarters in Offenburg is considered a pioneering project in the food industry, partly due to its optimal rainwater harvesting system by GRAF

Heave-ho!
In the picture, one of the three GRAF Platin XXL tanks are lifted with an excavator into the prepared excavation pit

CO_2 as a refrigerant, concrete core thermal activation, photovoltaic systems, heat recovery, and rainwater harvesting – these are all part of the new e-centre currently under construction at the headquarters of EDEKA Südwest in Offenburg's industrial park. Food markets have been operating in this location since 1973, but none have ever impressed with such an amazing operational and energy concept. "Then let's start a new chapter in the history of food retailing on the Kinzig," says Rainer Huber, Spokesman of the Management Board of EDEKA Südwest, at the ground-breaking ceremony.

The building will offer more than 42,000 square metres of space, including generous areas for sales, retail, restaurants and offices. The building, which operates entirely without fossil fuels, was designed by architects Müller + Partner from Oberkirch. EDEKA Südwest is investing 50 million euros in this project. Rainwater harvesting plays a special role in the sustainability concept – and this is where GRAF comes in.
The roof and car park areas of the market are designed according to the sponge city concept. Almost the entire roof area of more than 12,000 square metres is sealed with plastic sealing sheets that are connected to a rainwater harvesting system. The water is cleverly drained via collecting pipes and two filter shafts: into several GRAF Platin XXL flat tanks with a total volume of 75,000 litres, which are hydraulically connected to each other.

But why did they choose the GRAF flat tanks? Two key factors convinced the cp.plan planning office: they are easy to install and, thanks to their low height of merely 1.25 metres, are perfect for the high groundwater level on site. The Platin XXL is also the largest flat tank currently available on the market. A total of three of the Platin tanks were installed, which were perfectly adapted to the average total annual precipitation in Offenburg.

The tanks are prepared for both heavy rainfall and long dry periods. The rainwater harvesting system is controlled by the GRAF Aqua-Control + system control unit. In other words: when the fill level is low, a sensor-controlled switching valve opens to feed in drinking water as required. The next time it rains, the control unit automatically switches back to rainwater mode.

The drainage of precipitation from the roof into the tanks is assisted by the green roof on the e-centre. The plants not only improve the evaporative cooling of the building, but also ensure that rainwater does not run off directly, but is stored to a large extent. The drought-resistant, yet high-maintenance roof plants are watered by rainwater, which returns to the roof from the flat tanks via moisture sensors – thus completing the tried-and-tested GRAF cycle.

EDEKA Südwest
EDEKA Südwest is one of seven regional EDEKA companies in Germany. It comprises around 1100 stores in five federal states, six logistics centres and six production facilities

Photos: Pascal Oertel

⌃ 75,000 litres in file
There they lie, the three flat tanks, at a depth of 2.75 metres on a bed of gravel. The planning office opted for the flat GRAF Platin tanks made of plastic because of the high groundwater level

⌄ This is how it will look
... the food market of the future (including a six-storey office building). The area above the flat tanks will be paved after completion and used as a parking area for bicycles

EcoBloc after EcoBloc!
The infiltration system in Olympia Park at the Wanda Metropolitano stadium in Madrid has a volume of 500,000 litres

Which solution will it be?

Whether Spain, Norway or China: The innovative environmental solutions by GRAF are in demand everywhere. And it's not just about collecting rainwater,but also about protecting against flooding and other environmental disasters...

SNØ Winterpark, Oslo (NO) >>
The SNØ Winterpark, Europe's largest indoor ski hall just 20 kilometres east of Oslo, offers 36,000 square metres of snow-covered space, including a 500-metre-long ski slope, a 1.5-kilometre-long cross-country ski trail and a snowboard and freestyle park. The rainwater from the 51,000 square metres of roof and parking areas is collected in a rainwater retention basin consisting of more than 4,000 GRAF EcoBloc Inspect smart modules. The result is a retention basin with an impressive volume of over 800,000 litres

Olympia Park, Madrid (ES)
As the 2019 Champions League finals were held at the Wanda Metropolitano stadium in Madrid, the neighbouring Olympic Park was redesigned at the same time. The stadium sits on slightly elevated ground, which is why the park has repeatedly flooded in the past. To prevent this from happening in future, the Olympia Park was not only given a facelift, but also equipped with four GRAF infiltration systems. Three EcoBloc light infiltration trenches and one EcoBloc maxx module were used. Incidentally, the infiltration modules are the only ones of their kind on the market that are made entirely from recycled material and have been approved

<< Guiyang (CN)
These pictures show the installation of a rainwater infiltration system in China. In Guiyang, the capital of Guizhou province in south-west China, EcoBloc maxx with a retention volume of 240 cubic metres was installed. The system is used for the regulated drainage of the roof and courtyard areas of a school and a kindergarten in the university city of Guiyang. Because the GRAF infiltration modules have three times the storage volume of a conventional gravel infiltration pit (one module thus replaces around 1.4 tonnes of gravel), the German company was repeatedly chosen to provide the solution

Photos: Otto Graf GmbH

<< Crabtree Manorway North, Belvedere (UK)
Crabtree Manorway North is a large, newly built industrial estate in Belvedere, south-east of London. The Graf UK team designed and installed a customised 900 cubic metre EcoBloc Inspect Flex rainwater retention system consisting of 4500 heavy-duty rainwater retention boxes

All-weather zoo, Münster (DE)
The new Meranti hall in the All-weather zoo Münster, completed in summer 2023, is a tropical house with an event location and conference centre that is unique in Europe. The tropical space, which covers around 2,500 square metres, uses rainwater to irrigate its exotic plants. The rainwater from the 3,000 square metre domed roof is stored in two GRAF XXL Carat rainwater tanks with a capacity of 56,000 and 76,000 litres

Photos: Otto Graf GmbH

Announcements

Top performance: GRAF reaches 6 megawatts

In recent months, GRAF has equipped the roofs of its branches in Teningen, Herbolzheim and Neuried with photovoltaic systems. "In total, we will achieve an output of six megawatts. This means that the company has one of the largest solar areas in all of Baden-Württemberg," says Managing Director Otto P. Graf.
"Using solar energy to manufacture our products is an important step in our sustainability strategy," continues Graf. "It not only allows us to further reduce our emissions, but also to sustainably lower our production costs." In addition to the systems in Baden-Württemberg, the roofs of the GRAF branches in Dachstein (Alsace) and Luxembourg have also been equipped with photovoltaic modules. The total output is therefore even higher than 6 megawatts.

GRAF was GoGreen Pioneer at IFAT

At IFAT Munich in May 2024, the world's leading trade fair for environmental technologies, GRAF was among the GoGreen Pioneers**.** IFAT defines this as exhibitors who take particularly consistent, creative or innovative measures to make their trade fair presence more sustainable. Out of more than 3200 exhibitors, only twelve received the award. For GRAF, a sustainable trade fair presence has long been part of its corporate DNA, which is characterised by sustainably produced environmental products.

GRAF leads the way when it comes to inclusion

GRAF has been cooperating with Lebenshilfe Breisgau since July 1st, 2024. Since then, six participants have been integrated into the GRAF organization and perform simple packaging tasks, for example. The programme is supervised by a work educator from Lebenshilfe. A total of up to 18 jobs are available in the sectors of packaging, logistics and production. GRAF also plans to transfer participants with good qualifications into employment subject to social insurance contributions. This makes GRAF the first industrial company in southern Baden to take on a pioneering role in terms of inclusion.

Position paper presented in Berlin

As a member of the German Garden Industry Association (Industrieverband Garten e. V.), Otto Graf GmbH, together with other associations in the green sector, has drawn up a position paper on sustainable irrigation and green infrastructure in order to proactively help shape the BMUV's guideline for dealing with water scarcity. The paper aims to sensitise both consumers and local authorities to the need to use water consciously and conserve resources. On July 4th, the document was presented to State Secretary Dr. Bettina Hoffmann at the German Federal Environment Ministry in Berlin in the presence of GRAF Marketing Director Andreas Steigert. The position paper is an important step towards proactively helping to shape the guidelines for dealing with water scarcity, as formulated in the German Federal Environment Ministry's National Water Strategy.

Plastic backlog
Mountains of plastic waste at the GRAF subsidiary WPE before it is shredded, washed, sorted and then recycled by GRAF

PHOTO: NICO HERZOG · TEXT: SARINA DOLL

Recycling at any price?

In the fight against plastic waste, there is said to be a method other than mechanical recycling, as practised by GRAF: chemical recycling. The term has been causing a stir in the industry for a few years now. But do these methods truly qualify as an alternative?

<< Chemical recycling
Chemical recycling produces e.g. pyrolysis oil, a basic chemical for the production of new plastic

Mechanical recycling
At GRAF in Herbolzheim, millions of pieces of plastic are turned into valuable raw materials for sustainable environmental products

Declaring war on plastic waste: This is the mission of GRAF. At the competence centre for raw materials in Herbolzheim, plastics from short-lived packaging are sorted, melted down and processed to create new, sustainable and, above all, durable environmental products. This complex process is called mechanical or material recycling. Chemical recycling takes a completely different approach. In this process, plastic waste is broken down into its basic chemical building blocks – for example, with the best-known and most widely discussed method: pyrolysis. The carbon compounds are processed in such a way that in this case an oil is produced – the basis for new plastics.

The topic emerged in 2018 and quickly gained media attention. Some are talking about a miracle weapon in the fight against plastic waste. However, there is still no in-depth research into the subject, let alone an official definition of the term. So, what's the story behind this wonder weapon? Not much, says Dr. Dirk Textor, Chairman of the German Association for Secondary Raw Materials and Waste Management (Bundesverband Sekundärrohstoffe und Entsorgung e. V.) and part of the GRAF team.

"The CO_2 footprint of chemical recycling is devastatingly bad," he says. The reason for this is the complex, energy-intensive and therefore expensive process behind it. Since plastic is a very robust material, a lot of energy has to be invested to break the carbon compounds. "The CO_2 footprint is significantly larger than if I produce new plastic from non-recycled oil, regardless of whether resources are conserved," says Textor.

Photo: Jigal Fichtner

Mechanical recycling using plastic recyclate, as practised by GRAF, is a different story. The CO_2 footprint for mechanical recycling is small and a lot of CO_2 can be saved when it comes to the production of new goods. "Mechanical recycling should always be the method of choice for all waste for which it is possible," says Dr. Julia Vogel from the German Federal Environment Agency. There are also economic advantages: "Chemical recycling is quite expensive, especially compared to mechanical recycling," says the research assistant for waste technology and waste technology transfer.

Therefore, chemical recycling cannot keep up with mechanical methods. Only in comparison to waste incineration does chemical recycling have advantages: "A recent study by the German Federal Environment Agency shows that chemical recycling saves greenhouse gas emissions compared to the incineration of plastic waste. We therefore see chemical recycling as a possible substitution," says Dr. Julia Vogel. The idea behind it: the residues from mechanical recycling methods could be chemically processed further and thus close the gap to energy recovery. According to Textor, however, this is inaccurate. "Here at GRAF, we know only too well what high demands plastic materials have to fulfil for pyrolysis. If you look at the sorting of the yellow bin, for example, it quickly becomes evident which material stream is suitable for chemical recycling: the one that is largely mechanically recycled today."

»Mechanical recycling should always be the method of choice for all waste for which it is possible.«

But why is the topic still on everyone's lips? After all, pyrolysis is not a new discovery. The coal-oil plant in Bottrop already existed in the 1930s, but pyrolysis was discontinued in Germany at the end of the 1990s. Back then, the process was no longer economically viable, but today there are new incentives, Textor surmises: "Legislation requires packaging to be recycled. On paper, chemical recycling fulfils this requirement, which should please politicians and the chemical industry alike."
At present, chemical recycling is hardly used in Germany. Less than one per cent of all plastic waste is chemically recycled each year. "The yield from chemical recycling is so low that it hardly qualifies as recycling. Due to the more positive CO_2 balance, the consequent promotion of mechanical recycling would be a much more attractive alternative," says Textor, thinking of the future.

Dr. Dirk Textor
Chairman of the Secondary Raw Materials and Waste Management (Bundesverband Sekundärrohstoffe und Entsorgung e. V.) and Managing Director of GRAF subsidiary WPE Waste Plastics Experts in Haren

PHOTOS: DIMITRI DELL · TEXT: SARINA DOLL

The go-to woman

For Martina Meier there is only one speed: full speed. For more than 20 years, the management assistant has stepped into action wherever she is needed at GRAF

<< A good team
As assistant to the management, Martina Meier spends a lot of time with Managing Director Otto P. Graf. In the photo, the two discuss the plans for the new GRAF office building at the Teningen site

Looking after the trainees
Martina Meier is the first point of contact for GRAF trainees, from their first day to their very last. She does this with great passion: not least because she fully supports the GRAF training concept.

A strong duo
Martina Meier and her colleague Annemarie Fischer pull all the strings in the managing director's office

<< Event manager
Numerous GRAF events are also organised by Martina Meier. Here she coordinates the set-up for the open day, which was attended by more than 22,000 guests last autumn

At GRAF, there is a go-to woman who can handle any situation, serve as a single contact person for the management, and act as an all-purpose expert for special projects: Martina Meier. The management assistant is much more than what would have been called a secretary years ago, someone who merely answers the phone and writes emails. No two days are the same in Martina Meier's day-to-day work, her desk constantly teeming with new projects. After all, she is not responsible for Otto P. Graf's traditional day-to-day business in the management secretary's office, which is also staffed by Annemarie Fischer. Instead, Martina Meier steps in wherever she is needed.

And that includes many different areas across the company. A new GRAF plant is being planned? Martina Meier accompanies the process from the purchase of the land to the ceremonial inauguration. The boss gives a speech? She stands behind the stage and hands him the cheat sheet. A new project requires evaluation? Martina Meier takes it on. "I don't like boredom, which is why I love this fast-paced job," says the 40-year-old. It already became evident during her training that she was always up for new challenges. Just accounting? Sales only? No, thank you. Martina Meier wants more.

That's why, since 2003, she has been pushing the pedal to the metal at GRAF, and from 2009 has been the key member of the management secretary's office. Despite the high workload and huge responsibility, she always keeps a cool head. "I am very structured and tidy. As long as I have made my plan, nothing fazes me that easily," she says. These skills are in fact crucial for her position as Head of Training, which she took on more than ten years ago. And this despite the fact that the trained industrial clerk actually wanted to become a horse farmer in her teenage years. Show jumping is still her favorite hobby today, and she spends as much time as possible on the back of her horse in her free time. >>

»I'm always looking for the perfect match. Nowadays, I can tell within a few minutes whether an applicant is a good fit for us or not.«

>> **How much more complicated some things have become over time** is particularly evident when it comes to the topic of junior staff. What was once a single training occupation has now become 15 different training occupations across three GRAF locations. She is responsible for everything from recruiting, the selection process and onboarding to training and transfer planning. Yet she is not one for compromises: "I'm always looking for the perfect match. Nowadays, I can tell within a few minutes whether an applicant is a good fit for us or not."

When it comes to selecting trainees, she is given considerable autonomy, and her opinion is trusted on important issues – both professionally and personally. And because her attitude, combined with her empathetic nature, has proved its worth at GRAF, the 40-year-old now enjoys a great deal of trust from her colleagues and the management. She has earned this special status at GRAF over the past two decades through hard work and diligence, and has made many friends in the process. She moves around the GRAF site in Teningen as confidently as she does in her living room, is greeted warmly by colleagues and knows almost everyone. And anyone who doesn't know her yet will be immediately captivated by her easy-going manner. "For me, GRAF is a bit like family," she says.

Together with Annemarie Fischer, she rocks the secretary's office. Both are – almost always – regarded as the good souls of the company. Nevertheless, Martina knows: "You have to learn to take action in the interests of the company." And yet, she has found her dream job at GRAF – even if it demands a lot. When others have long since clocked off, she is often still at work. Martina Meier is motivated by the contribution she makes to greater environmental protection and sustainability through her work. Added to this are the attractive conditions at GRAF and the collegial working atmosphere: "I really like coming here."

»My job is a great balancing act. On the one hand, it takes a delicate touch when an employee turns to us in confidence. And sometimes you also have to be consistent and take action in the interests of the company."

Martina Meier, Management Assistant

PHOTOS: DIMITRI DELL · TEXT: SARINA DOLL, MIRIAM KRÄMER

In search of the Perfect Match

Year after year, GRAF searches for special talents for its apprenticeships – with success. What is it that the trainees appreciate so much about their training company? Five of them speak to us in person

Warehouse specialist, industrial electrician, machine and plant operator, industrial clerk – there is hardly any training occupation that does not exist at GRAF. A total of 18 apprentices are currently being trained at the three GRAF sites in Neuried, Teningen and Herbolzheim. GRAF's training programme has come a long way in recent years. What was once one profession has now become 15 different training occupations – and the trend is rising. In 2024, for example, the new e-commerce clerk apprenticeship was introduced.

The speciality of GRAF training: the chances of being taken on are 100 per cent. After all, GRAF thinks long-term and is looking for talented individuals who want to remain part of the company long after their training. Thanks to this mentality, the time spent training here is a real investment in the future – so it hardly comes as a surprise that GRAF trainees are highly valued within the company:

"The internal knowledge and the network that they bring with them due to the partly rotating training programme provides deep insights into the company," says training manager Martina Meier.

In order to prepare the trainees well for their future careers, GRAF offers internal exam preparation courses, in-house internships, stays abroad and much more.
GRAF trainees are selected with due care. "We only take people if we are 100 percent sure: this person will be a GRAF,' says Meier, who is responsible for everything from recruiting and training planning to onboarding trainees.

This is why the company engages in open dialogue with its applicants and takes part in the tried-and-tested practical day to find out more about the applicants' personalities. If you have the right attitude and, above all, enough ambition, you will get a job – even if this means that in strong years, GRAF sometimes takes on five instead of three industrial clerks at the same time. "We like to give good people a chance," says Martina Maier.

The training programme starts with a welcome day. Together with their families, the new trainees can celebrate the start of their new chapter in their lives on the first day and get to know their new working environment with a look behind the scenes and the initial onboarding.
What happens after that and what else do the trainees appreciate about GRAF as a training company besides the team outings, the guaranteed job on successful completion and the above-average pay? Five of them told us in these brief portraits. But it's best to read for yourself...

More about training?
Just scan the QR code and find out!

Maike, 25
Industrial clerk with additional qualification
3rd training year
Teningen

Hardly any other apprenticeship is as varied as that of an industrial clerk at GRAF! During my training, I worked in sales, purchasing, accounting and logistics and learnt a lot everywhere. Because I already had a knack for foreign languages at school, the additional qualification in European business management and foreign languages was a natural choice for me. I was able to get a taste of our export department and our French branch and use my language skills directly. But what I enjoy most is the HR department. I love the family-like corporate culture at GRAF and the team spirit among my colleagues. I am all the happier that my journey at GRAF continues: in my favourite department, Human Resources.

Bastian, 24
Industrial electrician
1st training year
Herbolzheim

I love my training as an industrial electrician and enjoy coming to work every day! Whenever something has to do with electricity at GRAF, I come into play. Of course there are also days when things don't go as planned, but it's precisely through these challenges that I learn and grow the most. Fortunately, my colleagues and my trainer are very committed to supporting me in many matters and a lot of value is placed on high-quality training. I believe: this is important because, especially as an industrial electrician, you will have a lot of responsibility later on. At GRAF, we are also allowed to plan and design our own projects during our training. These freedoms and the opportunity to make my own contribution are what I like the most.

Lotfi, 34
Plastics technologist
1st training year
Teningen

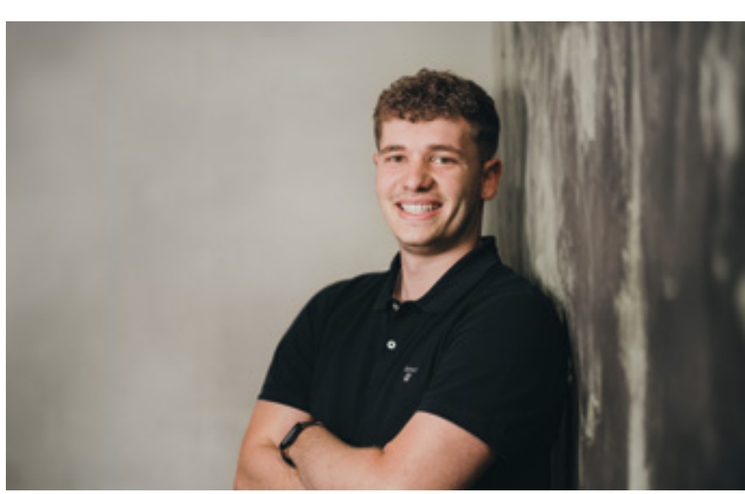
GRAF has a good reputation as a training company among my friends – that's why I decided to train as a plastics technologist following a recommendation. In my day-to-day work, I set up machines, i.e. I install the tools for the production of injection moulded products in the machines. Some tools weigh considerably more than 20 tonnes. I then prepare the material for production, start the machine together with my trainer and check the quality of the first parts. Thanks to the many different work steps, my working day is full of variety and I can learn a lot. I also feel sure that with my training and GRAF as a company, I have chosen a profession with a future.

Alina, 22
Industrial clerk with additional qualification
1st training year
Teningen

The fact that I got an apprenticeship at GRAF at all was pure luck! At the time of my application, all the training spots in the company had already been filled, but I still got the chance to train as an industrial clerk with additional qualifications in international business management and foreign languages. I am so grateful for this opportunity, because: there are no boring office jobs at GRAF. Instead, I learnt to take responsibility and manage my own projects in my first year of training. I particularly like the creative and sociable marketing department. The close communication and team spirit in the company absolutely helped me start my working life.

Moritz, 22
Industrial clerk
3rd training year
Teningen

When I started looking for an apprenticeship, I really wanted to find a company that matched my personal interests. GRAF is regional, sustainable and counteracts water scarcity with its products – all this motivates me day after day.
Thanks to various internships, I already knew pretty much what to expect in my training as an industrial clerk. GRAF has confirmed all my expectations and shown me how diverse and varied the job can be. I particularly enjoy working with my great colleagues and taking responsibility for my own work. My training is now coming to an end – but I'm really looking forward to new challenges in the purchasing department once I've been taken over.



<< Full halls and a happy boss
Otto P. Graf thanked the visitors in his welcoming speech at lunchtime and told his guests about the company's philosophy: to develop environmental products in a sustainable way

Deep insights
During various factory tours, the GRAF staff gave visitors insights into, for example, how the world's largest injection moulding machine works at the headquarters in Teningen

PHOTOS: JASMIN FEHNINGER · TEXT: STEPHAN FUHRER

22,000 guests at the open day

Come in, come all! At the first open day in autumn, visitors were amazed by the colourful show acts, sustainable products and the world's largest injection moulding machine

He was delighted with the enormous response – "but I still find myself looking at the crowd rather amazed," said GRAF Managing Director Otto P. Graf with a smile during his welcoming speech at the open day on the company premises in Teningen, where the crowds had just pounced on lunch after completing their tour of the factory. The selection at the food truck stands was just as varied as the sights at the exhibition, where visitors had the opportunity to experience how many environmental products are now produced here locally and in what way – sustainably, that is. The guests also had a chance to take a look at the production area, where GRAF employees were on hand to provide information.

The fact that numerous clubs from the surrounding area contributed to the success of the festival (for example with dance or magic shows, music and puppet shows) further turned it into a family event. "The effort was definitely worth it," emphasised the owner at the end of his speech – and he is already looking forward to the next time.

Supporting programme ^^
At the open day, family and friends of our employees were able to see how work is done at GRAF

Exhibition >>
The guests of the day not only learnt about the sustainable GRAF environmental solutions, but also about the history of the company

Musical delights galore >>
In the best October weather, the Musikverein Heimbach, the Winzer band Köndringen and the band The Looney Tones set the mood

It's showtime
The two dance groups En Vogue (TV Köndringen) and DE Squad (TV Bahlingen) showed off their skills throughout the day

<< for a greener planet
Visitors also showed great interest in the GRAF product presentation for a greener planet in the large exhibition area

Fancy a goodie?
Our GRAF team delighted visitors to the event with free GRAF products!

<< Do it yourself
At this station, visitors of all ages can experience how our gravimetric dosing and mixing unit precisely mixes up to six materials according to the exact recipe

Working for the local forest
15 GRAF employees signed up for the planting campaign in Kappel-Grafenhausen

PHOTOS: PASCAL OERTEL · TEXT: STEPHAN FUHRER

Planting instead of gifting

For the second time in a row, GRAF has dispensed with Christmas presents. Instead, around 500 trees were planted on our own doorstep in Baden – a gift to nature

If you are committed to sustainability, the best place to start is on your own doorstep. That's why GRAF's motto in November 2023 was once again: planting instead of gifting! Around 500 trees were planted in two forest areas in the northern Black Forest – by GRAF employees under the professional guidance of the responsible foresters. The campaign took place for the second time in a row. True to the motto: "Year after year..."?
Not quite. This would not do justice to the planting campaign that took place as part of the Heimatwald project in the municipal forests on the Black Forest side of Kappel-Grafenhausen. After all, the challenges are always different. While in 2022 it was the steep slopes that made planting difficult for the GRAF team at Ignazhof in Welschensteinach, last autumn it was the heavy rainfall. On the morning of the planting date, it was still pouring with rain – so much that even the GRAF rainwater professionals were a little worried about whether the day's programme would even be feasible.

But St Peter was merciful and it stopped just in time. The forest floor was still wet, but easy to walk on. More even: Although it had been raining for weeks, the ground was already bone-dry ten centimeters below the surface. "The problem of drought is still a major one, which is why we are now increasingly focussing on deep-rooted deciduous trees and mixed forests when planting new trees," explained district manager Ronja Schneider to the 15 or so GRAF colleagues who had volunteered for the planting mission. On top of that, climate fluctuations are not making things any easier for nature. "So, this is another type of water management that we're initiating here together by planting," the forester explained to the rainwater professionals.

In the end, there were a total of 500 trees, mainly oaks, but also a few hornbeams. The campaign aims to make the Black Forest as a whole more resilient by increasing biodiversity, creating new habitats for animals and plants and helping to ensure that even more trees can filter climate-damaging carbon dioxide from the atmosphere. At GRAF, these are plenty of good reasons to get involved.
Even the fact that heavy rain returned later that day was no big deal. After all, it only rained during the last few meters, when the majority of the group had already gathered for a final snack in the nearby Kappeler Hütte. Around the roaring stove, everyone quickly agreed that it would be a good idea to give nature a present for Christmas. And no matter how small the contribution compared to the big picture: ‘Every little tree counts,’ assured district manager Schneider, thanking her helpers for their efforts.

TEXT: SARINA DOLL

Meteorological Small Talk

We've all engaged in small talk about the weather to break the uncomfortable silence. So did our author – and ended up committing a climate faux pas

Anything is better than awkward silence. Even small talk about the weather. "The weather is totally crazy again today." That's all it takes when conversations once again trickle along like drizzle. Talking about the weather is the perfect gap-filler during dinner with the in-laws or (even worse) when your teenage crush suddenly turns up at the supermarket checkout, no chance of escape. The British social anthropologist Kate Fox even found that talking about the weather is comparable to affectionate babbling in primates – to overcome our natural reticence. So, trivial meteorological small talk has never done anyone any harm. Right?

That's what I thought as well. Until I committed the small-talk faux pas the other day. Because phrases about wind and weather sometimes play into my hands too. So, during a video call with a customer from Munich, I asked, "So, how's the weather with you?" Instead of starting a light-hearted conversation, my counterpart replied dryly, "It's pretty wet here." Only then did I remember the terrifying pictures of the flood in Bavaria. "I'm currently staying with my parents because my flat is underwater," she added. Shoot!

And that's when I suddenly realised: small talk about the weather as a social lubricant is turning into a double-edged sword in times of climate change. So is it time to expand the repertoire of harmless small talk topics? I replay the conversation with the customer. Maybe like this: "Great, the game against Scotland yesterday." A perfect opportunity for a discussion about the fundamentals of football. Not really my topic at all.

I can't really think of anything. No other topic is as wonderfully universal as the weather. I decide: I'm sticking with it. Only in the future with greater awareness of the emotions involved in this increasingly critical topic. And with a different focus – on weather solutions à la GRAF, for example...

Photo: www.stock.adobe.com/blocberry

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Issue 03 - 950771

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