

BILFINGER
magazine

BETTER
TOGETHER

02.2013

IN UNISON

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The agrarian economy and perfect division of labor among leafcutter ants

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Dieufort Wittmer worked at Bilfinger until he was needed elsewhere

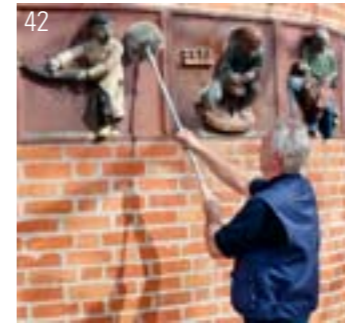


ENGINEERING
AND SERVICES

Thorsten Wittmann, chef at Mannheim's Michelin-starred restaurant "Da Gianni," is not the only one to cook on gas. There are a lot of people who rely on the little blue flame, which makes it so easy to control the heat level. But natural gas is dangerous. If a leak goes unnoticed, any spark could trigger an explosion. That's why Bilfinger EMS makes sure that it's safe. Hundreds of the compa-

ny's plants add an odorous substance to the gas that goes into the supply grids of municipal utility companies – it's a sulfur compound that makes people screw up their noses when present in even the tiniest of concentrations. The plants are located in France, Denmark, Sweden, Switzerland and Austria; in Germany, Bilfinger has a market share of around 50 percent.

THE SCENT OF SAFETY



DEAR READER,

Banks, insurance companies and commercial enterprises generally outsource management of their office real estate. Yet the idea that not only buildings but also industrial facilities can be managed by outside providers is a relatively new one. This edition of the magazine presents Swiss company Siegfried AG, whose business concept reflects this very principle. The company produces active ingredients for the pharmaceutical



Roland Koch
Chief Executive Officer
of Bilfinger SE

industry and procures its production facility maintenance services from Bilfinger. Our specialists are constantly on site and are as closely connected to the company as they are to their own.

At Bilfinger we believe that such outsourcing concepts hold considerable advantages for businesses throughout the industrial and energy sectors. For those companies that work with us, we provide engineering and services internationally, and we can do this comprehensively and at a very high level.

Yours truly,

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Shutdown in Rotterdam

A refinery is shut down, maintained, modernized – and brought back on line: Bilfinger manages the work of several thousand people as part of a turnaround.

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Trekking with donkeys

Looking for something to do for your child's next birthday? While hiking with donkeys, a group of untamed boys showed their softer sides – to the surprise of their parents.

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Pure substances

Swiss company Siegfried produces highly sensitive active ingredients from modified molecules. Bilfinger builds and maintains the production facilities.

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Latin America's leafcutter ants operate an agrarian economy and biochemical industry with a perfect division of labor.

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At home in Haiti

Following the catastrophic earthquake in Haiti, Dieufort Wittmer gave up his job as an engineer at Bilfinger in order to build safe wooden houses in the Caribbean.

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At work in Himmelreich

People with and without disabilities work together attending to the guests at a hotel and restaurant in the Black Forest – achieving greater understanding in the process.

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Right man for the job

The children are fond of the caretaker, and the city likes him, too: Bilfinger employee Lothar Gürtler is the soul of the Pestalozzi Special School in Halle.

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South Africa rises

South Africa needs electricity and skilled workers for its development. Bilfinger builds and maintains power plants and ensures there are enough skilled workers to operate them.

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INSIDE STORY
Carlos Olivo

LOVE IN THE TIME OF TEXTING

I love U

One in ten couples spends more time texting and writing Facebook messages to their significant other than they do talking face to face. A study by British insurance company esure found that the average couple spends just under four hours together (apart from when sleeping) – and that's not per day, it's the whole of the working week from Monday through Friday. Couples send each other an average of 1,000 texts and almost 400 e-mails a year.

«ONE FOR ALL, ALL FOR ONE»

The motto of Switzerland – and *The Three Musketeers* by Alexandre Dumas

FRÈRE JACQUES

Singing with others makes people happy, especially singing a round. The best known song sung in a round is about Frère Jacques, or Brother John, who is sleeping and doesn't hear the bells. A French nursery rhyme sung in four parts, the song has been translated into many languages and adopted in almost every corner of the globe.

1. 4. 3. 2.

Frè - re Jac - ques, Frè - re Jac - ques, dor - mez - vous? Dor - mez - vous?

Son - nez les ma - ti - nes, son - nez les ma - ti - nes, ding dang dong ding dang dong

English

Are you sleeping? Are you sleeping? Brother John, Brother John!
Morning bells are ringing, morning bells are ringing.
Ding, dang, dong. Ding, dang, dong.

Greenlandic

Piitaaq uumaa, Piitaaq uumaa Makigit, makigit,
Sianerpaluppoq, Sianerpaluppoq, arfineq, arfineq.

Italian

Fra Martino, campanaro, dormi tu? Dormi tu?
Suona le campane! Suona le campane! Din don dan, din don dan.

Polish

Panie Janie! Panie Janie! Rano wstań! Rano wstań! Wszystkie
dzwony biją, wszystkie dzwony biją. Bim, bam, bom, bim, bam, bom.

Spanish

Martinillo, martinillo ¿Dónde está, dónde está?
Toca la campana, toca la campana. Din, don, dan, din, don, dan.

Swahili

Kaka Johni, kaka Johni, unalala, unalala?
Husikii kengele, husikii kengele. Din, din, don, din, don.

Fijian

Kana mada, kana mada, tavioka, tavioka!
Kena coi na bele, kena coi na bele, na ika, na ika.

FRIGHTFUL!

Human togetherness is not for the fearful among us: psychologists distinguish between dozens of social phobias. So the question really ought to be: **Is there anyone who's not afraid?**

Fear ...

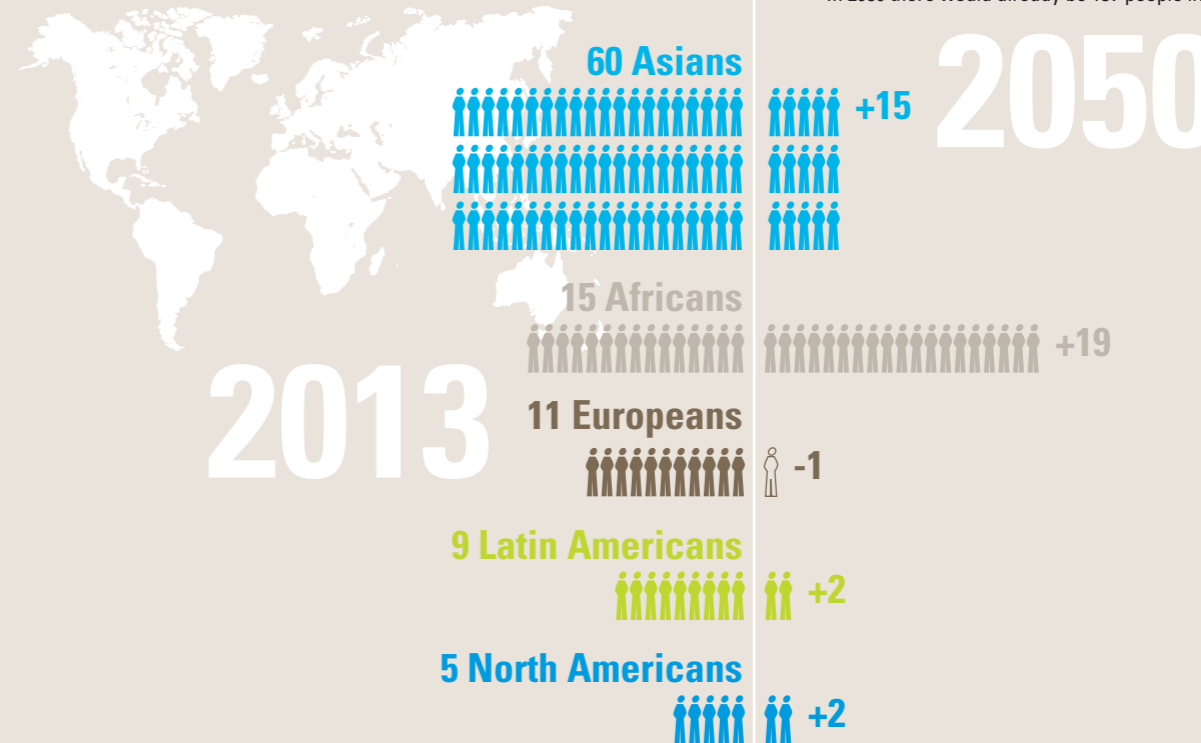
Anuptaphobia	... of staying single
Caligynephobia	... of beautiful women
Cyberphobia	... of working on computers
Decidophobia	... of making decisions
Dentophobia	... of dentists
Erythrophia	... of blushing
Gelotophobia	... of being laughed at
Halitophobia	... of having bad breath
Logophobia	... of speaking
Neophobia	... of new things
Nomophobia	... of being without a cell phone
Ochlophobia	... of crowds
Obesophobia	... of putting on weight
Paraskavedekatriaphobia	... of Friday the 13th
Phobophobia	... of fear

Photos Frank Schultze, Bart Rouwenhorst / Redhead Days

GLOBAL VILLAGE

If the world were a village with a population of 100, it would be home to:

The village population would grow by one each year.
In 2050 there would already be 137 people living in the village:



SCHALKE FOREVER!

Since late 2012, fans of German first-division football club Schalke have been able to stay loyal to their team even after death. A cemetery for fans has been opened in Gelsenkirchen, designed to look like a stadium. The cemetery can accommodate a total of 1,904 graves – no coincidence, since that is the year of the club's founding.

HAIR RED –
CLOTHES BLUE

They come from Denmark and Costa Rica, from the United Arab Emirates and Australia: redheads who gather by the thousands in the Dutch city of Breda. "Redhead Day" has been taking place there on the first weekend in September for several years now. The dress code for 2013 is blue.

"Solitude and company may be allowed to take their turns:
the one creates in us the love of mankind, the other that of ourselves."

Lucius Annaeus Seneca

SHOWDOWN AT THE SHUTDOWN



Precision, speed, exact timing: the turnaround is the pit stop of big industry. Entire plants are shut down, maintained, modernized – and brought back on stream. Bilfinger is managing a team of thousands as part of a refinery shutdown in Rotterdam.

Text **MARKUS WANZECK** | Photos **ERIC VAZZOLER**

The elevated flare hisses in the misty gray sky to the rhythm of a sedate pulse beat. A few seagulls circle above the TA Gebouw 1, the turnaround container building 1 – otherwise not a sound. Everything's still quiet on the site of the Kuwait Petroleum Europoort (KPE) refinery. The man who is about to change all that takes one of the Dutch bicycles from the stand in front of the container and gets on. Hard hat? Safety goggles? Yep. Gas detector? Got it. Nobody's allowed anywhere near the refinery without the yellow alarm beeper which detects dangerous odorless gases.

Jens Teichmann, Site Manager Turnaround & Revamp at Bilfinger Industrial Services, pedals down the long, dead-straight road, which leads straight into the maze of pipes and reactors, boilers and coolers in which four million tons of crude oil are processed every year. For months Teichmann and his team have been preparing the refinery for a gigantic pit stop: in the autumn the entire plant will be shut down, cleaned, maintained and started up again. "We're turning everything inside out and back again," says Teichmann. That is why he finds the term "turnaround" much better than "shutdown" – the other commonly used term. "It Sounds as if nothing

happens, but it's just the opposite in fact. You'll never find so much going on in a refinery as during a shutdown."

TURNAROUND AS CHALLENGE

Bilfinger is coordinating the turnaround as general contractor on the western tip of the Rotterdam port where the Rhine and Meuse flow into the North Sea. Project volume is around €40 million, presumably with about 450 Bilfinger specialists and five times as many external staff whose activities need to be coordinated precisely – a task that calls for perfect project management. It's already the fifth turnaround that Bilfinger is completing for KPE. And the largest: previously 50 percent of the refinery was shut down at two-year intervals. The 2013 turnaround marks a turning point. From now on, a complete shutdown will be on the agenda every five years.

"Getting all the individual processes from the subcontractors to form a large single unit, ensuring that everything intermeshes like gears in a transmission – that's the challenge," explains Jens Teichmann. He parks his bike in front of the reactor tower. 13 stories up by elevator and another six on foot bring you to the 65-meter-

Turnarounds made by Bilfinger

IN 2012 THE COMPANIES FROM BILFINGER INDUSTRIAL SERVICES WERE ALREADY INVOLVED IN A TURNAROUND RIGHT NEXT TO THE KPE REFINERY: AT BP IN ROTTERDAM. IN ADDITION, THEY WERE OPERATING IN NORDIC COUNTRIES IN PARTICULAR, FOR THE LIKES OF AKZONOBEL, FOR YARA OR STATOIL. APART FROM THE MEGA-SHUTDOWN AT KUWAIT PETROLEUM EUROPOORT, 2013 WILL ALSO SEE LARGE TURNAROUNDS UNDERTAKEN AT BASF IN LUDWIGSHAFEN AND AT BOREALIS, THE PLASTICS AND CHEMICAL GROUP IN LINZ, AUSTRIA.

Rainer Gross (right) and Jens Teichmann (center) have been managing major turnarounds together for KPE for the last six years.



Özlem Güler coordinates the subcontractors. Her work starts months prior to the shutdown.

high platform from where you have a view of the entire plant and the oil tankers behind anchoring in the world's third-largest port.

INTERNATIONAL COMPETENCE

Teichmann tracks his outstretched arm across the site: on the left the towering fractionating columns which distill the heated crude oil into various products. Next to them the huge fans in the air coolers. There you have the heat exchangers. One of the largest exchangers, slightly to one side, on its own, looks like new. And it is too: "We completely modernized that one only last year." It was number 6304C on the operation chart for the 2012 turnaround. And the figure's stuck in Teichmann's head even to this day.

From up here you only see a handful of people. Now, in early March, apart from the refinery staff, there are only three dozen Bilfinger specialists in the plant preparing everything for the large "showdown" at the shutdown. They come from four different Bilfinger companies with different areas of expertise. Later in the year they will be joined by colleagues from three other international Bilfinger units – plus twenty to thirty external companies which Jens Teichmann and his colleagues will also coordinate.

October 7. That's the day towards which they are all working here – day one of the shutdown. They will then have six weeks to get the plant into shape for the next five years. "That's when it'll be just teaming with specialists on the site," says Rainer Gross, Head of Turnarounds at Bilfinger, "a veritable army of metalworkers, electricians, material testers, insulators, scaffolders, bricklayers." Huge tents are being set up on the edge of the plant to cope with this massive influx of people. Even now, with still months to go, the work is already

getting underway. Gross tries to come up with something comparable that gives an idea of the size: "Try to imagine the Oktoberfest in Munich." Some of the tents will be used as gigantic changing rooms, with shower cabins and two lockers per person, one for their personal clothes and another for their work gear. Others will accommodate canteen facilities. "Naturally, we'll have to stagger the lunch breaks for the work groups, otherwise it'd be total chaos."

A turnaround is an exceptional situation in many respects: a mass event and a high-speed event at one and the same time. A turnaround, says Rainer Gross smiling, entails "the largest manageable form of chaos, which requires some sort of order. And it's precisely that that I love about my job." He and Jens Teichmann have been managing the KPE turnarounds since 2006. This experience gives them a sense of composure even if the preparations for this year's major shutdown are really extensive.

DIGITAL BACKBONE

If Gross is the theater manager and Teichmann the director of the turnaround, Özlem Güler, 33, Junior Consultant at Bilfinger Industrial Services, is the assistant director. The mechanical engineer coordinates the way the subcontractors mesh together. Or, as she says with somewhat of an understatement: "I ensure that the cleaners are in the right place at the right time." For three weeks Özlem Güler has been in Rotterdam to get up to speed on the coordination software.

The program is the digital backbone of the turnaround, linking the project managers with all the relevant information – and providing the Bilfinger coordinators and the customer with an insight into the project progress in real time. That is an invaluable

advantage compared with the paper plans of yesterday: there is a single overview list, always up-to-date and binding for everyone.

CHANGES ARE PART OF THE PLAN

The schedule envisages the pre-turnaround phase for mid to end September when the refinery is shut down. "Emptying the containers and the kilometer upon kilometer of pipework can take up to two weeks," explains Jens Teichmann. Then the plant is "sweet" – with no pressure or product – and ready to be dismantled.

The fact that the shutdowns may not run to plan, despite the meticulous preparations lasting several months, tends to be the rule rather than the exception. "New subprojects can emerge once the plant has been shut down, which you simply couldn't foresee beforehand," says Teichmann. "Then you need 48 hours in a day."

Apart from testing, cleaning and maintenance work, the major shutdown in Rotterdam is also serving as a revamp – modernizing and upgrading the plant. Teichmann points to a large transverse cylinder: "That container over there for instance, it's due. We're going to swap it out completely." Measuring six meters long, almost three meters in diameter and 5.7 tons deadweight, that is no easy task.

"The container has to be properly removed from a circuit of intake and output pipes – and from a power grid. All four meters up in the air." Seven firms need to be contracted and coordinated for this single project alone: mechanics, scaffolders, insulators, electricians, instrumentation experts that dismantle and put the control units back together again, as well as a crane company. "And Vrachtwagens," says Teichmann. Vracht-

wagens? Teichmann tries to find the German word. For six years he has spent most of his life in the Netherlands. A few moments and his mother tongue kicks back in again. Vrachtwagens – Lastwagen (trucks). Naturally, they also need a haulage company.

Restarting the plant, like getting back onto the race-track after the pit stop, will be the most difficult phase in the entire process. You need to ensure, says Teichmann, "that nothing runs dry," in other words, that there is the necessary pressure in all parts of the plant. And of course that there are no leaks and everything is absolutely safe.

SAFETY TRAINING MEDALS

To ensure the workers' safety, each of them receives comprehensive instructions tailored to the specific requirements of the KPE refinery the first time they enter the plant. It is no different in Rotterdam than with other major shutdowns elsewhere: before each turnaround there is a safety training; each time employees pass a safety examination they get a sticker on their hard hat. Hats are emblazoned with "Shell Turnaround 2009" or "Shutdown 2011 – TOTAL." The stickers are the medals of the turnaround crews.

Nonetheless, a hard hat with lots of stickers is a status symbol with an expiration date. After four years it has to be discarded for safety reasons. Hard hats made out of fiber-reinforced phenol-formaldehyde resin are granted another four years' grace before employees have to say their goodbyes. But then there is nothing more to be done. "At that point the men are quite sad," says Rainer Gross. "For them it's like they've given away part of themselves with the hard hat."



Calm before the storm: thousands of specialists will begin taking the refinery apart in October.

“THIS YEAR’S LARGE-SCALE PROJECT IS ALREADY THE 5TH TURNAROUND COLLABORATION BETWEEN KPE AND BILFINGER SINCE 2006. WITH BILFINGER WE HAVE FOUND A PROFESSIONAL PARTNER THAT PROVIDES QUALITY AND SAFETY FOR A GOOD PRICE AND ON SCHEDULE.”

Richard Boogers, KPE, Section Head Turnaround





WHO'S TAMING WHO?

A BIRTHDAY ENCOUNTER BETWEEN BOYS AND BEASTS
TURNS INTO SOMETHING UNEXPECTED.

Text TILMAN WÖRTZ | Photos ANTONIA ZENVARO



“What are we doing for my birthday?” asks my eight-year-old son, Ollin. It’s tomorrow. The bar is high – just yesterday Ollin was at his friend Tom’s birthday party at “Football Olymp,” an indoor football center. “Donkey riding,” I reply. Ollin pulls a face: “That’s crap.”

Actually, Ollin’s not allowed to say “crap” at home, but that doesn’t stop him. Ollin is at a difficult age. He doesn’t quite get it that he’s no longer in kindergarten, but acts all grown up at the same time. If I sing when I’m playing the guitar, he says: “Dad, you’re getting on my nerves.” Girls are stupid and we can’t get through the grocery shopping without him smuggling a bag of tooth-rotting candy into the shopping cart.

OFF TO THE DONKEY FARM

His disobedience is driving me crazy. And his teachers aren’t crazy about it either. Ollin and his friends from the football team are always getting up to no good in class. Back in preschool, we moms and dads found it hilarious that our kids had so much nerve. “The wild boys” we nicknamed them. But they’re still wild. And they’re in definite need of a behavior-changing experience with the animal kingdom.

So it’s donkey trekking for them. Though I’m a little worried that Ollin and his friends will quickly lose interest in leading the animals around and grumble at all the legwork involved. A friend told me about the Zachersmühle near Adelsberg. It’s a pretty little farmhouse in the Schurwald forest not far from Stuttgart, a timber-framed building with garden furniture outside. The donkeys are waiting by the stable wall, packs on and ready to go. The wild boys press themselves up against the fence, stretch their hands through and

try to pet them. One of the boys says: “I want to see them poop.”

The donkey tender, Harald, sports a leather hat, large mustache and a deep, reassuring voice. Harald explains a few things about his donkeys: that they’re always wanting to eat and will immediately veer off to the left or right if you’re not paying attention. That you’ll only get them to budge by pulling the rope forward – never backward. And that they react to the commands “No” and “Stop” – sometimes. “Like my cat,” announces Max. Harald presents a young donkey called Pedro as “our cuddly donkey.” “Cuddling” is usually the last thing Ollin wants to do, at least in public. But now everyone wants to lead Cuddly Pedro. The birthday boy is given the honor. Emilian leads Pedro’s mother, Conchita. Tom takes gluttonous Molly. Tall Efekan walks with the equally large Balduin. Max has Balthasar, Michael takes Gina.

Harald the donkey tender looks up at the gray sky once more; it’s drizzling. “A gust of wind would push the rain clouds into the Remstal and Filstal valleys, away from the Schurwald,” says Harald. But the wind doesn’t come. Drizzle turns to rain and the group moves off. Molly munches on the contents of another flower tub before leaving the yard. Tom has his first showdown. “No,” he shouts and pulls and shouts and pulls. The first few meters are on an asphalt road. One or the other of the donkeys is constantly breaking ranks and grazing by the side of the path. “Man, their necks are strong,” says Michael in an amazed tone. “No!” Tom shouts again. Molly goes on grazing. “I’m starting to sweat,” puffs Efekan.

POURING RAIN IS NO OBSTACLE

The group walks on a few meters before being forced to take another break. Ollin



UNFORTUNATELY,
OUR KIDS ARE
STILL CHEEKY
AND IN NEED OF
A BEHAVIOR-
CHANGING EXPERI-
ENCE WITH THE
ANIMAL KINGDOM.



spits out his gum noisily. Donkey Pedro jerks his head with a start. “Sorry,” says Ollin to Pedro (he actually says sorry!). “Let’s have a donkey race!” says Michael. Michael is always the fastest on the football pitch, too. “Yeah!” says Emilian. But the girl donkeys, Gina and Conchita, don’t feel like running, which immediately nixes that idea.

The trek takes a rest by a pond where the donkeys can eat in peace. It’s pouring rain; the wild boys don’t care. They’re totally into it. My worry that the little rascals might not be captivated by the animals was totally unfounded. Now they find an empty beer bottle and throw it in the lake (they have just one free moment and I have to tell them off again!).

NEW ROLE FOR THE BOYS

“What do you like about the animals?” I ask Harald the donkey tender. “They’re real characters. They don’t just do what you want them to,” is his reply. Which sums up pretty accurately the wild boys’ relationship with their teachers. Just this morning, Ollin, Michael and Tom had to stay behind for twenty minutes for talking in class about who had more power, Master Yoda or Darth Vader. But on the donkey trek it’s not the wild boys who are breaking ranks. Suddenly, they’re the ones who are responsible for making sure someone else doesn’t do it. They’re taking the teacher’s role! There’s probably no animal more suited to challenging children than a donkey.

The gang follows the line of the Holzbachtal valley and turns off onto a beaten track leading up the hill. The donkeys take a bold leap over a mud hole. The wild boys are thrilled. By now Max has discovered the secret of good donkey leading: “I have to pull on the rope real fast as soon as the

donkey starts to bend his neck down, then he walks on without stopping.” Ollin leads Pedro with one hand, petting his mane with the other.

“How much do they eat?” asks Tom, as Balthasar stops yet again to graze. Basically, Balthasar has a particularly fat stomach. “16 hours a day,” says Harald. “Their stomach is real small. The food goes in the front and straight out the back.” Which Balthasar actually proves right at that moment. “Ughhhh!” yell the wild boys. “It’s only pressed grass,” comments Harald with his calm, deep voice. Pedro eats a lot, too. Ollin is still petting him and tells him: “You can go on eating, you’re still small!” If only he had as much understanding for his little brother, six-year-old Gabriel. My life would be a lot more peaceful!

No aspect of donkey knowledge is left out. Harald has to tell the boys how tall donkeys grow (“between 90 and 115 centimeters”), how old they get (“fifty or sixty”), whether they eat meat and how fast they can run. “Forty kilometers an hour,” answers Harald, “much slower than a horse.” He also explains why: because donkeys are not flight animals. A horse runs away as soon as it senses danger. A donkey doesn’t – it first considers whether it should defend itself or flee. “Donkeys can even kick sideways,” says Harald. “Reeeally?” gasp the wild boys in astonishment. “And they’re curious,” says Harald. One of his twelve donkeys even likes fire. “When there’s a campfire burning he runs over and sniffs the smoke. He loves it!”

Having reached a hill, the wild boys are finally allowed to ride the donkeys. One boy climbs into the saddle, another leads. “It’s like riding a camel,” says Max, who’s never ridden a camel. Michael smiles in delight; the legs of tall Efekan almost

reach the ground. The fields left and right are wet with rain. The trek moves into rap mode. It’s time to explain a few things to Harald: “Michael and Emilian are forwards, Ollin’s in goal,” says Efekan. Tom adds: “We’re the best football team there is!”

TOO MUCH AFFECTION

After three hours the Zachersmühle farmhouse comes back into view. Not once did the boys ask “how much longer?” and not one of them complained about the rain. Only Pedro is getting fed up of Ollin still wanting to pet his mane. At the edge of the forest behind the sheep pasture Harald lights a fire. Now the wild boys get their chance to eat. They carve themselves sticks and hold their sausages over the flames. Michael has an idea: he grills pretzel sticks. The others think it’s a great idea and join in.

Ollin falls into bed exhausted that night, without even asking if he can stay up for an extra minute. Max tells his mother before going to bed: “Donkeys are pretty stubborn, aren’t they mom?” Mom nods. And Tom makes plans for his next birthday party. He doesn’t want to go to Football Olymp again. For his next birthday he wants to go donkey trekking. |

Donkey trekking in the Schurwald for two to six children costs €90 for a half-day or €120 for a whole day.

Contact: Tel. +49 (0)7166-255

In the Bilfinger workshops on the Siegfried site, generators and pumps are constantly being taken apart, repaired and put back together. Every single cog in the high-tech wheel must perform flawlessly.



Serge Kieffer, the best welder at the site, seems to have momentarily lost track of time and space. He's putting the finishing touches on a pipe joint and examining his work like a sculptor would survey a sculpture. He pulls the mask down over his face and welds a seam just a millimeter thick before pushing the mask back up and checking the joint: perfect. "This is a routine job," says the 52-year-old. "The really tricky ones are the joints we have to weld looking through a mirror – like a dentist working on someone's back tooth."

Attention to detail is key at Siegfried AG. That applies to both the workshop where Serge Kieffer welds his joints and to the high-tech laboratories and production halls on the company's vast site in Zofingen, situated between Basel and Lucerne. Siegfried, a Swiss company that also has sites in Malta, New Jersey and Shanghai, produces active pharmaceutical ingredients for international pharmaceutical companies. Just a few milligrams of these substances are enough to relieve pain or fight a pathogen.

Regula Suter is Head of Production Support at Siegfried AG. The trained chemist is a picture of composure, even though she could spend an entire morning listing the challenges she has to overcome on a daily basis. Her empire is the halls where the base substances and solvents are stored – materials that entered the site in trucks and rail tankers. "We work with large quantities of hazardous goods," says Suter. "It's all about protecting our people, the environment and our substances." The pressure and the temperature in the tanks and pipes need to be adhered to exactly. The countless valves and seals need to function properly. If solvent were to leak out, a single spark could start a flash fire. Even using a phone is banned

here," explains Regula Suter. "That's because if you dropped a cell phone and the battery came out, it could produce a spark."

In addition, each piece of equipment and each reaction vessel has to be reconfigured, checked and approved prior to commissioning for production of a new active ingredient. "Because new medications are constantly coming onto the market, the equipment has to be converted very often," explains Plant Manager Rolf Aebi (48).

FASTIDIOUS INSPECTORS

Around 50 times a year, customers and regulators send inspectors to Zofingen to put the facilities, documentation and products under the microscope. The particularly fastidious Food and Drug Administration (FDA) also pays regular visits. "There's never been a problem of note," says Rolf Aebi. But the stern looks of the FDA inspectors can make even the most relaxed of characters break out in a sweat. "If an inspector finds fault with anything, it can mean that we are not permitted to ship that product to the client." A defective component in the pipeline, a minor leak or a grain of dust in the wrong place can be enough to get the company into trouble and even endanger its license.

Meeting the highest quality standards, delivering with precision, avoiding outages at all costs: mastering this threefold task is the job of Siegfried's workforce of some 500 in Zofingen, supported by 60 specialists from Bilfinger Industrial Services. Easily distinguishable by the different logos on their hard hats and work coats, chemists, engineers, technicians and mechanics work together closely: Bilfinger is responsible for engineering, maintaining and updating the

THE SCIENCE OF PURE SUBSTANCES

140 years ago, Swiss company Siegfried began manufacturing tinctures with sage and St. John's wort. They now produce complex active pharmaceutical ingredients from modified molecules. The production facilities are built and maintained by Bilfinger Industrial Services.

Text **MATHIAS BECKER** | Photos **CHRISTOPH PÜSCHNER**



Dress rehearsal in the clean room: Siegfried employees check that the facility is leakproof by testing the air in the clean room. Only when they are certain that not even the tiniest of particles can escape from the facility can drug production begin.



Technicians from Bilfinger Industrial Services regularly calibrate the pressure gauges for the plants. "It's all about protecting our people, the environment and our substances," says Regula Suter, Head of Production Support at Siegfried.

plant and machinery, Siegfried AG operates it. A division of labor that works because each partner has built up a thorough understanding of what the other does, enabling trust to flourish.

"We look after the facilities as if they were our own," says Volker Osdoba (44). So it's appropriate that the Bilfinger manager, his engineers and his technicians have moved into offices in what used to be Siegfried AG's main art nouveau style building, which seems to exude the history of the company. The walls in the stairwell are adorned with mosaics depicting poppies and foxgloves – plants on which the company's early success rested. Osdoba himself has a desk in the sumptuously decorated room where pharmacist and company founder Samuel Benoni Siegfried once sat. For the service provider to have been allocated that space is an honor and a duty at the same time. "We have a connection with Siegfried," says Volker Osdoba. "What's important is that we take the initiative." For example, his people are currently working on reducing the number of different types of seals in use, which will eventually make repairs easier and cut costs. "We don't wait to be asked, we come up with this kind of project ourselves."

WASHING, FILTERING, DRYING

Much has changed, or should we say almost everything has changed, since old Mr. Siegfried began blending sage and St. John's wort tinctures 140 years ago. Today, medications are still based on plant substances. "But we are now able to precisely modify and

synthesize molecules until we get exactly the active pharmaceutical ingredient we want," explains Plant Manager Rolf Aebi. Various raw materials are bonded in a synthetic process and converted initially into crystals – thus simplifying the removal of impurities. The crystals are purified by dissolving them in a hot solution like sugar in tea. The crystals fall to the bottom of the container when cooled at precisely defined temperatures. They are separated from the solution using ultra-fine filters and then dried in a vacuum. Up to 20 such processes are necessary before the desired molecule is formed: a pure active pharmaceutical ingredient. And almost zero molecules of a different kind. Exactly which substances Siegfried produces and for which customers is something that Rolf Aebi cares to divulge only in homeopathic doses: "They include painkillers, antidepressants and the drugs that go into nicotine patches." There are many others, but he really cannot reveal any more. "Trade secrets," he says with a smile.

A routine visit to multipurpose hall TCR4. Technicians Antonio D'Ambrosio (27) and Daniel Bärtschi (43) stand before one of the reactors containing several thousand liters being churned by powerful stirrers. A glance at the measuring instruments housed between pipes, cables and motors on the outside of the reactor reveals that everything is running as it should. "And I've got my stethoscope, too," says D'Ambrosio. He regularly places it against the motors: "If something's not right, I can hear it before we've even begun to take any real measurements." |



"We all pull together"

Three questions for Dr. Rolf Aebi, Plant Manager at Siegfried AG

Mr. Aebi, what is the biggest challenge for Siegfried AG?

Our day-to-day work is a bit like fitting a square peg into a round hole: we need to meet the highest safety standards, react quickly to customer requests and produce goods of the highest quality. Any deviation from the time schedule or quality would be disastrous.

Why did you choose Bilfinger as your partner?

The bigger the company, the more weight it has when it comes to purchase prices when sourcing materials, or speed when delivering spare parts. Most importantly, Bilfinger also attracts highly qualified people and that shows in the quality of the work.

How intensively do you work together?

The goal for both of us is the same: smooth production. If you only have your own interests at heart, you merely coexist – and problems are preprogrammed. But if you have an insight into the other party, trust can grow and success ensues. We all pull together here. It's a good partnership.

UNDERGROUND MEGACITY

They live with millions of their own kind in a tight space, practice agriculture and operate a biochemical industry with perfect division of labor: leafcutter ants.

Text ELMAR JUNG

The path through the Brazilian rainforest is impeccably clean. There's not a branch or twig on it. Why is that? Well, it gets cleaned every day. Hundreds of thousands of leafcutter ants stream back to their nest over the mini-highway – just a hand's breadth wide. They haul fragments of leaves with them – with tiny pygmy ants from the same colony perched on top. These are the air defenses against scuttle flies swooping down onto the leafcutters in a bid to lay their eggs: they lay them near the back of the neck, where the larvae then penetrate into the ant's body.

The path leads the caravan more than 100 meters through the forest, ending abruptly at the gates of a megacity. Countless leafcutter ants of the genus *Atta* are bustling about in the shadow of a two-meter-high column-shaped dome of loose earth. Worker ants hand over the new crop of leaf fragments to smaller nest dwellers at the entrance, who carry them to underground farms where they are used as fertilizer for fungus cultures. Other ants are occupied with building a ventilation shaft while soldier ants – about eight times larger than their colleagues in the worker caste – keep watch and protect the nest against intruders.

An urban lifestyle, agriculture and perfect division of labor just like in a highly developed society: scientists are only now beginning to uncover the fascinating social structures of these tropical ants, known to the scientific world as "superorganisms." In a bid to reveal the architecture of the leafcutter ants' megapolis, a team working with Brazilian scientist Luiz Forti developed a method that can take a cast of the inside of a nest. A mixture of eight cubic meters of water and more than six tons of cement was poured in at the entrance. The scientists were amazed at what they were then able to see. A nest branching out over more than 67 square meters was laid bare to them, consisting of 1,920 chambers, 238 of which were occupied by fungus farms. They found an enormous underground system of horizontal and vertical tunnels and channels, reaching depths of up to eight meters. The loose earth the ants transported to the surface and deposited there while building their nest weighed about 40 tons. Up to eight million ants live in a nest like this.

Crucial for the nourishment of the huge civilization is a symbiosis with various fungi, which began some 50 to 60 million years ago. In short, the animals

The farmers of the rainforest: the leaves are food for the fungus on which the ants feed.

Corridors link 1,900 chambers with more than 200 fungus farms: this is the sight that greeted Brazilian scientists after they had made a cement cast of a leafcutter ants' nest.



nourish and cherish fungus cultures inside their nests and feed on them. Other social insects besides leafcutter ants, such as some species of termites, have also made the transition from a hunter-gatherer existence to a reliance on agriculture. But leafcutter ants of the genera *Atta* and *Acromyrmex* farm in such an advanced manner as to achieve something entomologist Bert Hölldobler calls “ecological dominance”: obvious control over their environment.

While most of the 230 fungus-farming species of ants native to South and Central America use rotten leaf matter and dead organic material as fertilizer, 45 species, including *Atta* and *Acromyrmex*, went over to feeding the fungus fresh leaves some ten million years ago. In doing so, both the fungus and the ants tapped into an incomparably higher nutrient density, which saw their colonies grow to several million individuals in the course of an evolutionary leap. “This leap forward is definitely comparable with that of the human race when we learned to control fire and began to cook our food, giving ourselves access to a much wider range of vitamins and minerals,” says biologist Morten Schiøtt from the University of Copenhagen’s Center for Social Evolution.

Schiøtt and his fellow scientist, Henrik De Fine Licht, have decoded some parts of the complex chemical processes that take place when a fungus is fed with fresh leaf matter: the fungus grows like black bread mold on the substrate of leaf remnants, dis-

playing a multitude of tube-like structures somewhat similar to a bath sponge. The leaf fragments brought by the ants would actually be inedible to the fungus: particularly the phenols contained in the leaves and responsible for defending them against natural enemies would damage and ultimately spoil it. That’s if it weren’t for the enzymes that the fungus actually has within itself, just not in the right place. The enzyme-rich fungus cells are in fact found in the tips of the hypha, thread-like cells that grow within the substrate.

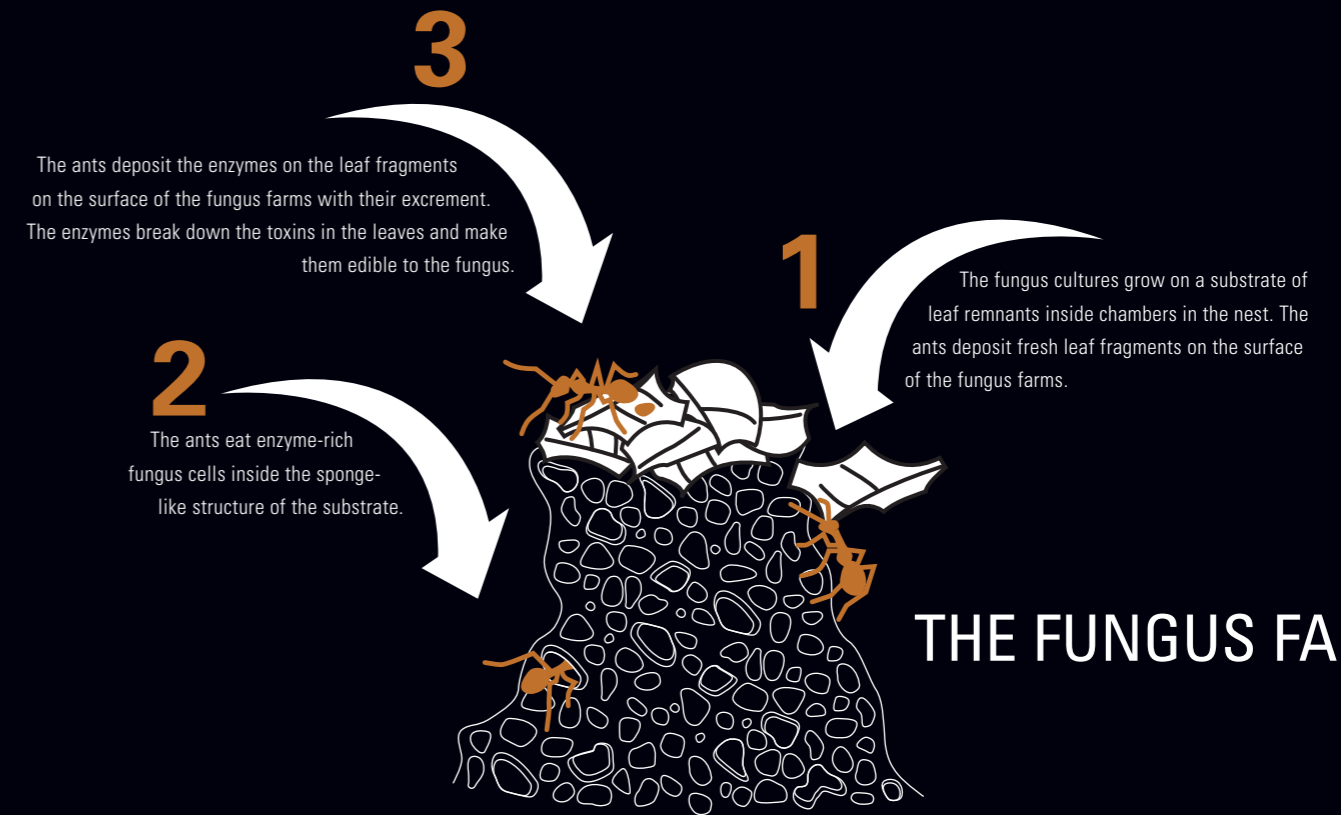
The ants get inside the substrate through the tube-like corridors, where they then eat these cells, taking the enzymes inside them ready for depositing on the freshly cut leaf matter back at the surface. This is how the ants make the leaves edible to the fungi.

PERFECT WASTE MANAGEMENT

Scientists compare this fascinating process with bioreactors, in which humans use enzymes to break down organic matter to produce ethanol and other substances. Incidentally, most *Atta* species even build special waste chambers for the depleted substrate left behind by the fungus, though these take up an ever-greater volume of the nest as time goes on. Therefore, *Atta colombica* has made the transition to disposing of the material outside of the nest – indicating that leafcutter ants would also seem to know a thing or two about sustainable waste management. |



The fungus grows on the substrate of leaf fragments like mold on a piece of bread.



THE FUNGUS FARMS



SAFE HOUSES FOR HAITI

When the earth shook Haiti in 2010 and hundreds of thousands of people lost their lives, Bilfinger engineer Dieufort Wittmer was staring at the TV screen in disbelief. "They need me there," he thought, and moved with his family to the Caribbean. He's been building earthquake-proof wooden houses there ever since.

Text DAVID WEYAND | Photos CHRISTOPH PÜSCHNER

Construction engineer Dieufort Wittmer in the center of Port-au-Prince. The capital city's cathedral (in the background of the photo) is in ruins.

Haiti, January 12, 2010, 4:53 p.m.: Marie Carmel (48) is up on her flat roof hanging out the laundry, her six children playing beside her. Suddenly she hears a whistling sound then feels a blast of air as if a big storm were sweeping across Port-au-Prince. At that moment, the roof, the house and the entire neighborhood begin to move. Marie Carmel screams, the children howl. Buildings can be heard collapsing, dust clouds make it impossible to see. When the dust settles, they are all still standing on the roof – white-faced and shell-shocked but uninjured. They are lucky: the annex they are standing on survives the earthquake. The main house is a pile of rubble.

EIGHT PEOPLE TO A ROOM

Three years later, Marie Carmel is sitting in the kitchen of her new home. Through the open door to the back yard she points to that annex; plywood panels and plastic sheeting have replaced the missing wall: "That's where we lived after the quake – eight of us in one room." Now the widow and her children have 34 square meters to live in: three rooms, a narrow corridor and a kitchen. The frame, the walls and the doors – they're all made of wood. 38-year-old construction engineer Dieufort Wittmer and his team built the new house in just two weeks based on his own plans.

When the earth shook in Haiti in January 2010, Dieufort Wittmer was poring over construction plans in Montrouge, a suburb of Paris. He's an engineer working

for a subsidiary of Bilfinger Industrial Technologies that specializes in structural calculations for pipes used in the construction of nuclear facilities. The whole of that night and the next day he sat staring at the pictures on the TV screen: streets laid waste, hospitals devastated and people searching for survivors and anything they could eat in the ruins. "They need me there," thought Wittmer.

Dieufort Wittmer was born in 1975 near Gonaïves, a town of 100,000 in the north-west of Haiti. He grew up with four siblings in extreme poverty: "I know how it feels to go hungry," he says. His parents died within a short time of one another

The port city of Léogâne, not far from Port-au-Prince, was mostly destroyed. Reconstruction has yet to be completed.



About 350,000 victims remain confined to tents and emergency shelters.



A DEVASTATING CATASTROPHE

On January 12, 2010 an earthquake measuring 7.0 on the Richter scale rocked the Caribbean nation of Haiti. The epicenter was 25 kilometers southwest of the capital Port-au-Prince. The catastrophe claimed the lives of 230,000 people and left 1.5 million Haitians homeless. Today, 350,000 people still live in tent cities.



Wife Martina and daughters Idiani, 8, and Charline, 2, moved with Dieufort Wittmer to his homeland.



Home construction for families is financed by donations from Germany – and profit from commercial orders like school construction.

when he was nine. He found a new home in the children's village of "Lebensmission," the German-Swiss aid organization. His German foster family adopted him. They moved back to Germany with Dieufort in 1986. His biological siblings stayed in Haiti. He grew up in Landau, a town in the Palatinate region, passed his Abitur at school, completed a carpenter's apprenticeship and studied engineering in Karlsruhe. Since 2007 he's been working at Bilfinger, first in Germany, then in France.

THE IDEA OF HIS LIFE

Seeing the devastation on TV inspired Dieufort Wittmer with the idea of his life: "Why not build quakeproof houses out of wood?" The construction material is stable and flexible, relatively light and you don't need a lot of tools to work with it. "Wood frame construction is ideal for Haiti," says Wittmer, who speaks with a touch of the dialect common in the Landau region. "The wooden panels nailed on to the frame absorb the horizontal shear forces of an earthquake or storm. And the roof construction is light, even if it collapses it doesn't automatically crush the people inside."

He was eager to turn his idea into reality, but his German wife Martina was hesitant because of their two children, Charline and Idiani, and Dieufort was in the middle of an ongoing contract. "I had a lot of talks with my wife and my boss," says Wittmer. Eventually he took a vacation in the summer of 2010 to go and see for himself how he could help on the ground.

Dieufort Wittmer's starting point was his old children's village in Gonaïves. The

town was not directly hit by the earthquake, but many people fled there to escape the chaos in the south. He finds a place to stay in the "Lebensmission," where he's allowed to use the organization's own wood workshop. And he has friends who help him. Mainly the brothers Guirlo and Frantz Pierre, who also grew up in the home. Guirlo (35) is a construction engineer, Frantz (39) learned the joinery trade in the children's home and passed



IT DOESN'T TAKE MUCH TO BUILD AN EARTHQUAKE-PROOF HOUSE:

- Boulders for the foundations – Haiti
- (Lime) sand for concrete and plaster – Haiti
- Cement for concrete and plaster – import
- Building timber/squared timber – import
- OSB board – import
- Nails – import
- Screws – import
- Corrugated iron/metal sheet for the roof – import
- Stretched wire/wire mesh as a plaster base – import
- Paint – import

15 craftsmen, 15 days.

Costs, depending on size: €6,000–€9,000.



Like riding a bicycle: Dieufort Wittmer monitors work on the rafters. He worked as a carpenter before his studies.

his apprenticeship exam in Germany. On the road with the two brothers, a dozen other Haitian workers and three German carpenters, Dieufort Wittmer puts up a model home in two weeks. He designed three different models in total, varying only slightly in layout and size. The model home is financed by donations from Germany. Bilfinger and some of his colleagues also provide financial support. "My drive must have impressed them," fig-

ures Wittmer. All in all, he has completed homes for eight families with his volunteer work and donations from Europe.

CAREFUL SELECTION

"Our old house was the ugliest on the street, and now the neighbors want Dieufort to build them a wooden house, too," says Marie Carmel. While 70 applicants are on Wittmer's list, the selection criteria are strict. Single mothers or families with



The Sagrage family from the city of Gonaïves moved into the first earthquake-proof house from Dieufort Wittmer.

lots of children have the best chances. The only condition is that they have a plot of land and inadequate shelter.

SCHOOL FOR 1,000 CHILDREN

In October 2011 Dieufort Wittmer left Bilfinger and moved his family to Haiti. His wife Martina found work as a social education worker in the "Lebensmission" and he devoted all of his efforts to establishing his aid organization, "Habitat HT." The ob-

jectives of the organization are clearly defined: to build simple and safe houses to provide jobs for locals – and to wean the organization off of donations. "A house costs €6,000 to €9,000 to build, that's not much, but it's hard for a small organization to get donations on a large scale."

That's why Wittmer started his own planning office and construction company at the beginning of this year. The profits from the commercial contracts will go into

his aid project. The concept seems to be working out. The first big contract recently went into the construction phase. In Léogâne, the town that suffered the most destruction from the earthquake, the company is building a school for around 1,000 children – earthquake-proof, of course. His customer is the Christian aid agency Nehemia, and the budget amounts to some €430,000. Dieufort Wittmer plans and supervises the projects, puts the teams to-



Dieufort Wittmer's aid organization online: www.habitat-ht.org

In Grand Goave, a new home was given to Noelcin Jean-Louis and Galliothe Marie Rosiette along with their children.



Everything OK boss? A dozen craftsmen and helpers count on Dieufort Wittmer's organization for work and bread.

gether and organizes the materials. That's why he has to rush off now, from Marie Carmel's wooden house to the big construction site.

He drives his pick-up over a dirt track to the highway that leads to the southwest. Sacks of cement are piled up there, head-high on the sidewalk. Wittmer pulls up, negotiates a price with the trader and pays for 100 sacks. Frantz Pierre will come and pick up the cement in his truck tomor-

row. Wittmer bought the clapped-out old truck with his savings, and the pick-up, too. "Helping people to help themselves is the way I do things," explains the construction engineer. The medium-term aim is for Guirlo and Frantz Pierre to be able to run the business alone. "If it works out, I'll take my family back to Europe in a year or two," says Dieufort Wittmer, adding with a wink: "That's what I promised my wife." |



Dr. Karl Ludwig Kley
and Andreas Wigger,
Managing Directors of
Bilfinger Venture Capital.

WIND BENEATH THE WINGS OF STARTUPS

Bilfinger Venture Capital invests in young, technology-oriented companies.

Bilfinger provides expertise and venture capital to support startups offering products and services that fit the company's profile: "We become involved especially if the new technologies optimize processes at Bilfinger, or extend our range of services," explains Karl Ludwig Kley, one of the two Managing Directors of Bilfinger Venture Capital.

Once a deal to cooperate with a startup has been signed, Bilfinger makes a considerable contribution to the firm's development – particularly financially, but also in other respects: "We provide advice on management issues and support in gaining access to markets and seeking additional investors," says Karl Ludwig Kley. The founders of the new company also benefit from Bilfinger's technological expertise and network. Bilfinger's investments are generally restricted to five years, after which time the technology should be mature and the business concept enjoying market success.

Bilfinger is particularly interested in innovations that could be of significance for energy transformation. For example, the Group is investing in Sunfire, a company located in Dresden, which develops technologies to produce synthetic fuel or methane gas out of electricity from renewable sources. Dub-

bed "power-to-liquid," one method applies renewable electric energy to carbon dioxide and water to produce syngas, which can ultimately be turned into gasoline, diesel, kerosene and methanol. Another method, "power-to-gas," makes methane that can be fed straight into the existing natural gas grid. Both of these technologies enable the long-term storage of renewable energies. Bilfinger and Sunfire are currently building a joint demo plant for the power-to-liquid technology, with Bilfinger contributing its experience in designing and constructing large-scale industrial facilities.

One of the most recent investments is Cormoran, a young Augsburg-based company which has developed a measuring technique that can be used to analyze the causes of corrosion inside boilers in settings such as coal-fired and biomass power plants. As Cormoran's operational partner, Bilfinger Power Systems will offer the new technology to its customers in the energy sector. The advantages of the arrangement are clear to all involved: the startup gets wind beneath its wings and Bilfinger adds the ability to offer customers a package of services at the cutting-edge of technology to its portfolio.

www.vc.bilfinger.com

FOTOS istockphoto.com

SMART GRIDS

Intelligent local grids make it easier to feed in green electricity generated decentrally. Bilfinger Mauell worked with partners to develop a new technology to facilitate this process.



As the energy revolution continues, more and more consumers are becoming electricity producers, feeding power into the grid from renewable sources such as their photovoltaic systems, heat pumps and biogas plants. But the electricity grid is currently designed to convey energy to consumers from a small number of large-scale power plants. If they are to meet the new challenges, the grids will require smarter regulation with new sensors and control elements.

MEASURE AND MONITOR

Bilfinger Mauell has been working with utility company Mainova, grid specialist SAG GmbH and the University of Wuppertal to come up with a system that can cope with the change in load flows and voltage ratios. In a research project, they converted two sections of Mainova's low-voltage grid into a smart grid with an automated control system known as "Smart RTU" (Remote Terminal Unit). This is the first project of its kind in Germany.

The system revolves around the use of new software and new hardware components to measure how much electricity flows into the grid from decentralized sources. The data gathered can then be used to help regulate the grid.

Legislation gives green power priority over conventionally produced electricity. For instance, on a windy day, power from wind farms is fed into the grid first, with production from gas-fired power plants being cut back. Yet feeding in green power produced on a decentralized basis within the local low-voltage grids is still a challenge given that it is virtually impossible to calculate how much electricity the various small-scale sources will be supplying at what time of day. The fluctuating supply makes designing the grids a complex business.

Smart regulation of a local grid makes these requirements manageable: "Our technology enables us to conduct more power through the grid," says Wolfgang Friedrich from Bilfinger Mauell. The smart grid also protects

transformers, cables, switches and fuses from overload.

COST-EFFICIENT TECHNOLOGY

"Smart RTU" is applied at the secondary substations, which regulate the power supply to buildings in the locality. One in ten of Germany's 40,000 secondary substations would need to be fitted with the new technology to make the entire low-voltage grid fit for the future. One of the advantages of this system over other concepts is that there is no need for additional installations in households and companies. In addition, the technology is only about half as expensive as the cost of expanding the grid to obtain the same output. The Smart Grid project won the State of Hesse's Smart Energy Award in May 2013.

www.mauell.bilfinger.com

INSULATING INDUSTRIAL INSTALLATIONS

SAVING BILLIONS OF EUROS



Every year, some €3.5 billion could be saved throughout the EU if industrial installations were insulated under economical considerations. The cost of doing so would come in at around €900 million, with the investment generally achieving payback within the first year for the companies concerned. These are the findings of a study commissioned by the European Industrial Insulation Foundation (Eiif) on energy-saving options in industrial installations.

To help industrial companies maximize this potential, the Eiif developed Tipcheck, a European standard for thermal energy auditing of industrial installations. Consultants are trained and certified by the Eiif, giving them the capacity to check the loss of heat from existing installations and present the improvement potential. For new installations, they calculate the optimum insulation thickness from an economic perspective.

Bilfinger has Tipcheck engineers who have been certified by the Eiif operating in numerous countries across Europe.

Download the study from www.eiif.org

HEILBRONN FUTURE PARK

ENERGY-SAVING BUILDING

The "WTZ 1" office building in Heilbronn's Zukunftspark (Future Park) has a primary energy consumption almost 30 percent lower than legally required and boasts CO₂ emissions that are 40 percent lower than statutory limits. The building was designed and built by Bilfinger Hochbau. Help in optimizing the energy concept and achieving EU Green Building Partner status was provided by bauperformance, a Bilfinger Group company specializing in consultancy and auditing services.

The building is thermally insulated to a high degree and the windows are designed to enable people to work in daylight without the sunlight heating the rooms up. An air-to-water heat pump provides heating, with a wood pellet system kicking in to handle peak load. Pipes run through the ceilings and walls and store thermal energy there, which can be released as and when needed. A photovoltaic system has also been installed on the office building. Excess electricity is fed into the public grid.



NEW TECHNOLOGY FOR COAL POWER

42 PERCENT EFFICIENCY

The new Block R at Boxberg power plant in Lausitz near the German/Polish border boasts an efficiency of 42 percent, which qualifies the 675 megawatt plant as one of the world's most efficient lignite-fired power plants. In addition to a range of other components, Bilfinger Power Systems supplied the entire high-pressure piping system – the key element for the high efficiency of a power plant. The flue-gas desulfurization system (FGD) comes from Bilfinger, too. It has a tray absorber, making the technology the first of its kind in Germany. The tray, a large perforated metal plate, distributes the flow of flue gas evenly in the absorber and facilitates the intensive exchange of substances. This means that pollutants in the flue gas can be separated with less energy input than before.



What exactly is ...

AN EEL LADDER?

Eels have been a mystery to people since ancient times. Slippery as they are, they have left many a scientist fishing in the dark. Aristoteles believed that the fish was formed in the mud. The truth is just as surprising as some of the theories. Eels are hatched from larvae in the Saragossa Sea near the Bahamas before they travel thousands of kilometers to European rivers where they spend several years hunting crawfish, worms and larvae on the riverbeds.

But what happens when the eel's urge to travel upriver is blocked by a barrage? On Germany's Mosel River near Koblenz, engineers from Bilfinger Scheven are helping the migrating fish get over the obstacle by means of a ladder. They have installed a steel enclosure with rungs spaced five centimeters apart. The

eels use this ladder to wriggle up six meters from the riverbed to the surface of the water. Here they encounter the "fish pass." The 200-meter-long construction is a kind of bypass for fish: it bridges the six-and-a-half-meter difference between the upstream and downstream waters of the barrage. The pass consists of a series of concrete basins, each of which has a 15-centimeter difference in height. The fish climb higher and higher until they reach the upstream waters.

At some point toward the end of their lives, the eels begin their journey back to the Caribbean to spawn – and die. They normally depart on stormy nights in the fall – but nobody really knows why. Eels remain a mystery to us.

Text JAN RÜBEL | Illustration SKIZZOMAT

AT WORK IN HIMMELREICH

People with and without disabilities work together attending to the many guests at a hotel and restaurant in the Black Forest.

Text **MATHIAS BECKER** | Photos **RAINER KWIOTEK**

Max Grässlin prefers to take the night shift at the Himmereich, which is German for kingdom of heaven. "I'm not a morning person," says the 27-year-old with a cheeky grin. From 6 p.m. onward he carries coffee, beer and schnitzel to the tables in the rustic-style restaurant, chats with the guests

and brings people their bills. If you look carefully you can see that the work does not exactly come easy for him. The effort of carrying a tray wipes the smile off his face. Gingerly he puts one foot in front of the other as if walking on thin ice. Every movement of the hands demands concen-

tration. But what's special about Max Grässlin is not that he serves less briskly than others. It's that he does it at all.

Max Grässlin's spatial awareness and motor skills are impaired. The doctors say it's because his brain was starved of oxygen at birth. After attending a special-



Perhaps not as fast as others but always friendly: Max Grässlin serves guests at Hofgut Himmereich.

needs school and taking a job preparation course for a year, he could have started work at a sheltered workshop. But Grässlin wanted a real job. At 19 he applied for a job at the Hofgut Himmereich, which is what's known as an integrative business: able-bodied and disabled people work together at the hotel/restaurant in the Black Forest town of Kirchzarten. "We prefer to call them 'people with a handicap,'" says director Jochen Lauber. "Max may have motor deficiencies," Lauber goes on. "But his communicative nature compensates for that." Lauber says the same goes for the other employees: "They have a lot more in them than you think."

It's no accident that the Hofgut Himmereich has a name that means kingdom of heaven. The 700-year-old farm estate stands at the entrance to a small ravine known as Höllental (Hell Valley) situated between Freiburg and lake Titisee. Bands of robbers used to lie in wait on the steep slopes, and if you made it across Hell Valley in one piece, you really did feel like you were in heaven when you reached the inviting farmstead.

Nowadays, truck drivers and business travelers stop here for lunch. Later it's the day-trippers from lake Titisee and Feldberg who pull in. On weekends the hotel is full of groups attending seminars. On

many online booking portals it has the best ratings in the region.

MORE THAN JUST A GOOD DEED

This success story would have been unthinkable a few short years ago. Founded as a stand-alone business in 2004 by the director of the social welfare organization in Breisgau-Hochschwarzwald, the "project" initially attracted guests who stopped by to do "a good deed." If you wanted tasty food and proper service, you gave the place a wide berth. Until Jochen Lauber arrived. A graduate in hospitality management, Lauber had worked in a Frankfurt office block until 2008 putting catering



Max Grässlin and kitchen helper Ronny Nack find the time to share some fun at work.

teams together for major events. Whether they took place in Berlin or in Shanghai was immaterial, all he ever got to see were columns of figures: “The human element was missing from my job,” says the Himmelreich’s director, now 41 years of age.

He has his wife partly to thank for daring to make the move to the Black Forest. She was feeling the pull of her childhood home in southern Germany, so Lauber started scouring the employment market. It didn’t take him long to find the Himmelreich, but it was in a bit of a mess financially. “The company was in need of a business mind,” says Lauber.

Sometimes the wind of change he brought with him felt to the staff like a storm breaking over their old habits and ways. Not every one of Lauber’s ideas was put into practice straight away. “I had to learn that things don’t move so fast in this

company,” he says. So he took his foot off the gas, but stuck to his guiding principle: “We are a restaurant business and not a community center.” Five years later revenues have doubled.

RIGHT TO WORK

2008 was not only the year Jochen Lauber arrived at the Hofgut Himmelreich. It was also the year the UN Convention on the Rights of Persons with Disabilities came into force. Signed by 155 nations, the charter acknowledges the right of people with disabilities to work. It demands an employment market that is equally open to people with and without disabilities – which is still a far cry from the reality in Germany. Though companies with more than 20 employees must by law have at least five percent severely disabled people on the payroll, many of them pay an

equalization levy instead. The 600 or so integrative businesses in Germany that actually do integrate people with a handicap into day-to-day operations employ only about 8,000 severely disabled people. That’s contrasted by the some 280,000 individuals who work in sheltered workshops, who often do not benefit from as much advancement and mostly stay in their own little groups. The people and their talents remain unseen.

In a move to change that, the Hofgut Himmelreich has run an academy since 2007 that advises integrative companies and, in conjunction with the Federal Employment Agency (FEA), offers a job preparation program for young individuals with a handicap. The 18-month program, to which people are referred by the FEA, is a highly coveted opportunity. To date, almost all graduates have found employment on

the primary labor market.

Oftentimes it’s just tiny changes that determine whether someone with a handicap can do a job or not, says Jochen Lauber, telling the story of the chambermaid with Down’s syndrome. “She wasn’t very good at remembering how to tidy a room. So we took some index cards and drew pictures of what she had to do.” The woman memorized the pictures in next to no time and since then she’s been working independently and reliably as a member of the team. And then there’s the thing with the saucepans. “There are so many of them, even a person without a handicap would get them mixed up.” So the pots and pans at the Himmelreich are each given a name: Wolfgang, Heidi or Trude is scored into their side. And if you order a slice of cake, you might be surprised to see that they’re all square. “It’s so they don’t

fall over so easily,” explains Jochen Lauber. It took him a long time to find a good confectioner that would bake him square cakes.

TIME TO GET CLOSE

Max Grässlin has an aid in the form of a wooden board the size of a record sleeve. When he sets a table, he places it in the position where the plate will eventually go. Like a template, it helps him place the silverware at the right angle. “If I do it without the board, the knives and forks end up all over the place,” he says. But the board alone is not enough. For Max Grässlin, the path to becoming a waiter is a path of hard training. At the opening ceremony eight years ago, the tray of champagne glasses wobbled precariously in his hands. There was no question of him serving food or pouring drinks. Then

a volunteer helper practiced everything with him – from mental arithmetic to napkin folding. Day after day they’d spend the afternoons trying out his hand grips and making up memory aids. In the meantime Max Grässlin has passed the exams for three of the 13 work modules the company developed in conjunction with the chamber of commerce: looking after guests, the counter and the cash desk.

Once in a while one of director Jochen Lauber’s former colleagues calls up to ask how it’s going for him in his hotel in the country. “Good,” Lauber will say – realizing how happy he is to have made the break. His world moves more slowly now than it used to. There’s time for people to get closer to one another.

www.hofgut-himmelreich.de



Historical scene on a postcard: thieves used to lay in wait in the neighboring Höllental.



1



2



3

1 No mistaking whose pot it is with the name engraved. 2 A wooden board ensures the table is set right. 3 Square pieces of cake don't fall over easily.

EMBRACE-HOTELS

In 2007, eleven businesses employing able-bodied and disabled individuals came together to form EMBRACE-Hotels, one of which is the **Hofgut Himmelreich**. Now numbering some 40 hotels, 38 of which are in Germany, one in Italy and one in Greece. The Embrace-Hotels employ some 1,000 people, about half of whom have a handicap.

www.embrace-hotels.de





HEALTH IS A MATTER OF THE HEART

Simone Schön

When an elderly gentleman went into cardiac arrest and collapsed at a street festival recently, a woman immediately rushed to his aid. 30 compressions followed by two artificial respirations, repeated constantly and in quick succession. The man survived. "I'm very happy and proud about that," says Simone Schön (44), a nurse. She had taught the resuscitation technique to the woman who saved the man's life.

Working for Bilfinger HSG Facility Management, Simone Schön is in charge of the health center at Georg Fischer, an industrial company in the Swiss town of Schaffhausen. She sees almost a dozen patients a day in her exam room on the plant grounds, but first and foremost she teaches first aiders and in-house paramedics. These are the people who look after the health of the company's employees – or help complete strangers, in the case of the life-saver at the festival.

Photos Heinz Heiss, Paul Nordmann



Frank Chico

For Frank Chico, the health of his employees is at the top of the agenda. He is Corporate Safety Director at Bilfinger Industrial Services in the United States. 2,146 people work for his company across 14 states: in the paper and chemicals industry, in food production and in the energy sector. Last year there was not a single lost day caused by an accident across his entire workforce. This performance won the company's US unit the Bilfinger Safety Award for 2013. "When our people know that their health is important to the company, they also look after it themselves," says Frank Chico.



The Pestalozzi School building, built in 1929, was modernized by Bilfinger.

THE PERFECT MAN FOR THE JOB

The children and the teachers are fond of the caretaker – and the city likes him, too: Lothar Gürtler, who works for Bilfinger, is the soul of the Pestalozzi Special School in Halle.

Text **JULIUS SCHOPHOFF** | Photos **KATHRIN HARMS**

The faucet in class 2a's room won't stop running: Lothar Gürtler gets the emergency call during the fourth lesson of the day, from the teacher's cell phone. The caretaker is a welcome diversion for the second graders. Three boys immediately jump up to give him a hand. Lothar Gürtler turns off the faucet under the sink. "Hold tight!" he says to one of the boys, who then clutches the faucet, looking up at it with great concentration, believing he's being a huge help.

The school caretaker, Lothar Gürtler (56), is not the mean spirit many will remember from their own schooldays. "He's fun, he's always making jokes," says one of the second graders. "He fixed the gate," says another in awe, "with a pair of pliers!" Ms. Makrinus, the teacher, comments: "Whenever you need him, he's there."

Lothar Gürtler unscrews a part of the faucet, the self-closing mechanism. It's meant to make sure that the water doesn't run for more than a few seconds after you press it. But it's not doing that. "It's shot!"

says Gürtler. He guessed what was wrong and brought a replacement with him. The school will never see a bill for his work – and that's why caretaker Gürtler is liked not only by the children and teachers but by the City of Halle, too.

POOR CONDITIONS BEFORE MODERNIZATION

When the municipality had the building rehabilitated five years ago, they contracted Bilfinger to not only modernize the building, but also to handle future maintenance and operations at the school as part of a public-private partnership (PPP). For a 25-year period, the company is now responsible for making sure things run as they should at the Pestalozzi School – or stop running, as the case may be, if you're talking about the faucet in class 2a.

Renate Makrinus (56) teaches math, German and biology at the special school. Her students have learning difficulties, which means they have special educational needs. "They need to touch everything, to feel it with



A welcome change for the second graders: Lothar Gürtler fixes a broken faucet.



The drawer in the school's kitchen kept getting jammed, but caretaker Gürtler knows what to do.

their hands," she explains, "we call it learning by doing." When the caretaker came in to fix the faucet, they were in the middle of loading green cubes onto wooden trains, ten cubes per wagon, to get a feeling for tens and units.

Renate Makrinus is also in charge of equipment and furnishings at the Pestalozzi School. She has seen many caretakers come and go in her 30 years there. "It was a blessing when we decided to go for this public-private partnership," she says. And not only because of Lothar Gürtler: most of all because the partnership with Bilfinger is what enabled the brick building, which was built in 1929, to be modernized in the first place. As Renate Makrinus explains, the east wing had been renovated back in 2001, in the conventional way. The west wing was due to follow in 2005 – but the city ran out of money. There's a file in Lothar Gürtler's office with photos of the ruinous condition the building was in prior to the modernization. The pictures of the old toilets say it all: enormous water stains on the ceiling and walls, moisture on the windows, chipped tiles, grimy doors. The need was great, which is why they opted to partner with Bilfinger: the west wing was ready for the 2008/2009 school year after just a year's construction work.

TEACHER INPUT IN BUILDING WORK

Even today, five years on, the building still looks in good order. The toilets and classrooms are spick and span. The equipment is cutting edge. The lights dim automatically when the sun shines into the room; a motion sensor hangs from the ceiling. Only when someone enters the room does it turn the heating up to 22 degrees. Empty classrooms with the radiators on underneath open windows are only to be found in the conventionally renovated east wing. When it came to the west wing, Bilfinger involved the school management and teachers in the planning process. Renate Makrinus was present at many of the meetings: "We discussed each of the construction phases in great detail. What do we need? And what don't we need?" Equipment for the home economics kitchen, the design of the schoolyard, the color of the

corridors – the teachers had a say in everything. "It was quite different with the east wing, much more bureaucratic. Nobody asked us what was important to us." There were no special requests back then. But when the PPP modernization came to an end, Renate Makrinus was delighted at some of the surprises that hadn't even been in the plans: the giant sandpit in the schoolyard, two new table tennis tables and the newly renovated school clock, which had stopped running decades ago.

CARETAKER SETTLES ARGUMENTS

The bell sounds and the students from class 2a return to the classroom. It's the fifth lesson, German, and they're learning about the letter F today. Meanwhile, caretaker Lothar Gürtler is on his way to fix a broken emergency light in one of the corridors. Sometimes he's not only needed to fix things but to settle arguments as well. "He's in great demand with the older boys in particular," says Ms. Makrinus, "we don't have that many men here." On the Pestalozzi School's teaching staff there are 33 women and just one man.

Interpersonal skills are a key qualification for any Bilfinger staff deployed in schools, says Oliver Gaber, Managing Director at Bilfinger HSG and therefore Lothar Gürtler's ultimate boss. "There needs to be a fit between the children, the teachers and the caretaker." There's obviously a fit at the Pestalozzi Special School: when Lothar Gürtler asks a ninth grade class for volunteers to help him roll garbage cans out to the street, he gets four running up to him at once. When he's raking the leaves in the schoolyard, the little ones clamor round him trying to "help": "They practically jump on my back."

But when he goes in to replace the fault-prone push faucets in the classrooms with controllable faucets at some point in the near future, the students will not get to watch him. He does these things early in the morning when the children are still in their beds. That's because, much as they like their Mr. Gürtler at the Pestalozzi School, oftentimes what makes a good caretaker great is that you don't see him. Or his invoices. |



11 o'clock: singing, 12 o'clock: writing, 1 o'clock: gym. The old school clock shows diligent students and their daily routine. The clock hadn't worked since the 1980s. Bilfinger restored it in collaboration with a local clockmaker.



"Children need to feel that they're worth something"

Interview with Tobias Kogge (57), Officer for Youth, Schools, Health, Social Affairs and Cultural Formation in the city of Halle

Two-thirds of all schools in Halle have been renovated or newly built in the past several years. Why?

Our schools in the areas of the city with the industrialized apartment blocks were much too big because more and more people chose to move in to the old apartments in the part of the city that had been built in the late 19th century. We had wonderful old school buildings there, but they didn't live up to modern-day technical standards.

Why did you team up with Bilfinger?

The company – unlike the city – had the necessary funds to renovate the schools and the expertise to operate them. Now Bilfinger is our partner on the ground. Bilfinger people are addressing educational issues and getting a real understanding of the way things work in schools.

The city opted for a public-private partnership with Bilfinger to modernize its schools. PPP is a contentious issue in Germany. Has the concept proved a success in Halle?

Absolutely. The construction work may cost three or four percent more, but we end up making substantial savings over the whole lifecycle because the buildings are much cheaper to operate. And we manage this even though the quality is higher than it is with conventional operating models. We built eleven new schools with Bilfinger in Halle. How many times do you think we had to negotiate over changes and additions? Not once. And we opened the schools on the planned date each time.

And what do the children get out of it?

We need school buildings that look like the future. The children need to feel that they're worth something to us. Bilfinger has set standards on this count, and not only for Halle. The schools still look like new, even years after modernization. When you take visitors from other cities around them, you don't need to show them a school prospectus any more.



Apprentices at Bilfinger in South Africa can look to the future with confidence.

THE SKY'S THE LIMIT

There are two things South Africa needs to drive its development forward: electricity and skilled workers.

Text EVA WOLFANGEL | Photos FRANK SCHULTZE

Brazil, Russia, India, China – and now South Africa, too: the BRIC countries have become the BRICS countries. For the past two years, South Africa has officially been one of the world's five largest, fast-growing emerging markets. A development that also benefits Bilfinger Power Systems. The company has more than 2,000 employees in South Africa specialized in services for power plants.

South Africa's growth is gobbling up energy at a rapid pace, and the country's appetite for electricity generated from coal is enormous. Since 2008 Eskom, Africa's largest producer of electricity, has therefore been building a total of twelve



Training Manager Jordaan: "Promoting talent internally makes it possible to climb up the ladder."



Job well done? Apprentices discuss the quality of a welding joint in the training workshop.

new power plant blocks at two locations. The blocks have a total output of 9,000 megawatts and Bilfinger is manufacturing the components. The company depends on good skilled workers to get the job done. Unlike in Germany, for example, there is no tradition in South Africa for companies to qualify young talent on their own. Many companies leave training to state institutions and private schools. Bilfinger has taken a different path: the company has established a total of three training academies at its locations.

FULL CURRICULUM

"No company in South Africa does a more comprehensive job of training welders, boiler technicians and pipe fitters," says Sonet Jordaan, the company's Training Manager in South Africa. The apprenticeship takes 18 months with alternating practical and theoretical teaching units. "Until now, there was no official curriculum for pipe setters," says Sonet Jordaan with a sense of pride: "On behalf of the government, we developed a suitable program which is now valid nationwide." Up to 100 young people will be taking the welder and other specialist training programs in 2013. "And we could easily use

double that number." Because other companies are only too happy to recruit the highly qualified people coming out of the program, they have to commit to remain with Bilfinger for a period of at least two years after they have passed their exam. Which is of course far from the worst option. The company supports the health insurance of its employees and, parallel to the regular working day, there are scholarships and internships which make it possible to move up in the company.

"The sky's the limit," promises Sonet Jordaan and points to Sam Mabotja as an example. The son of a laborer came to Bilfinger when he was 19 years old and took advantage of every opportunity – from internal company scholarships to management training programs. Today, at just 34 years of age, he is a director. "If you want to have shade one day, you have to plant a tree," says Mabotja: "Companies in South Africa have to invest in young people in order to remain competitive. And, by the same token, young people have to use the opportunities that are presented to them." Mabotja smiles: "I am living proof that this philosophy is true."



Moving up at a steep angle: training is shaped by equal parts practice and theory.



Director Sam Mabotja: "If you want shade, you have to plant trees."

Top employer



Bilfinger is among the most popular employers in Germany. The company was ranked an outstanding 9th in a list of the 100 most popular employers for engineers. This is the result of the current study from Berlin's Trendence Institute in cooperation with Manager Magazin.

As part of the study, about 35,000 business, engineering and IT students were asked about their preferred employers, with about half of those surveyed from engineering programs. Bilfinger offers a diverse range of entry-level positions and development prospects in a growing international environment.

www.career.bilfinger.com

Getting in position for grid expansion



Bilfinger is getting itself in position for the expansion of the electricity grid in Germany, and has acquired the FRB Group, specialists for overhead power lines. The company, which is located in Dinslaken, Germany, plans, maps out and assembles high and ultra-high voltage overhead power lines. The acquisition forms the starting point for a growth strategy that Bilfinger is pursuing in connection with the expansion of high and ultra-high voltage grids. In future, the Group will deliver an extensive range of solutions including the laying of underground cables and the construction of underground cable tubes.

In April 2013, Germany's Federal Parliament passed a law on the accelerated expansion of the electricity grid. The law calls for the construction of 36 ultra-high voltage power lines to transport the energy generated by wind turbines and conventional power plants in the north of the country to areas of heavy consumption in the south and west.

Conservation despite motorway



After a construction period of just three years, the 27-kilometer-long Peninsula Link Highway in the Australian state of Victoria has now been officially opened for traffic. A project company led by Bilfinger designed and financed the project and will operate it over a period of 25 years.

The four-lane motorway will improve the traffic situation on the Mornington Peninsula southwest of Melbourne. The project traverses an ecologically sensitive area and includes a total of 28 bridge structures. More than 1.7 million new trees and shrubs have been planted along the route and a large number of both wildlife underpasses and noise protection walls have been erected. As part of the project, Bilfinger also completed a 25-kilometer-long bicycle and footpath that connects bush areas, wetlands, parks and conservation areas.

Photos Helgi und Susann Städter/photocase.com

Control systems for energy technology



GreyLogix, a company specialized in automation technology with its headquarters in Flensburg, has been part of the Bilfinger Group since February 2013. Bilfinger thus complements its range of industrial services and expands its position as one of the leading manufacturer-independent service providers for electrical, instrumentation and control technology.

GreyLogix designs and delivers automation solutions, primarily control systems for facilities in the energy and utility sectors as well as in the process industry. A special focus is in the field of gas technology. Here the company is active in the area of systems control technology for the transport and storage of natural gas.

Largest provider of construction logistics



In construction logistics, Bilfinger sees opportunities for growth and development in European markets outside Germany. The company has therefore acquired CCL Consulting & Construction Logistics GmbH which is headquartered in Berlin. Together with the activities that are already present in the Group and planned sales of €40 million, the acquisition creates the largest provider of logistical engineering and services for construction projects in German-speaking markets.

CCL's range of services includes planning services for construction logistics as well as coordination and management of all on-site processes. This is complemented by supplementary services related to construction works such as occupational safety and waste management. The company's most important markets currently include Germany, Switzerland and the Netherlands.

Growth in water technology



The acquisition of US water technology specialist Johnson Screens makes Bilfinger Water Technologies into one of the world's leading providers of components and services in nearly all areas of water and wastewater technology.

Johnson Screens produces mechanical components for the separation of solids from liquids and gases and provides associated services. The products are used for drinking water extraction, in the oil and gas industry and in other industrial sectors for wastewater treatments and resource reclamation. The company's most important markets are North America, Europe and the Asia-Pacific region.

With the acquisition, Bilfinger gains access to new markets and manufacturing capacities in important growth regions. Output volume in water and wastewater technology doubles to over €300 million.

SOME 70,000 PEOPLE WORK FOR BILFINGER.
EACH OF THEM HAS THEIR OWN STORY.

CARLOS OLIVO

Engineer Carlos Olivo (38) commutes between Germany and Mexico as Sales Director for Bilfinger Water Technologies. His company is involved in the renovation of Mexico City's sewer network.

What do you consider your best quality?

I try to stay positive. That way you feel better regardless of what happens.

Can you give us an example?

Well, I studied in Germany and planned to work there, too, but I couldn't find a job. That was disappointing, but at the same time I told myself that I hadn't lost anything. Everything I'd learned I could take back to Mexico with me. But then, a few days before I was due to leave, I got an offer – for the job I'm in now.

What was your happiest moment as a child?

I spent eleven years as an only child before my little brother was born. At first I was really angry! But then I noticed how nice it is to have him around.

Do you have a favorite memory?

In my youth I used to go to the beach a lot with my parents and brother. That's when the four of us were still together.

Do you miss your family?

Sometimes. But it's not like a pain, it's more a feeling of being connected to one another even over a great distance. My mother died four years ago. She got sick just when I'd been given my scholarship to study in Germany. I didn't know whether to go or not, but she said: "I'm going to miss you, but this is your future. Go!"

What is the best thing about your job?

That I can do something good for the people in Latin America, for whole cities even: we're making their water clean!

What are you afraid of?

I suffer from a fear of heights. As an engineer I have to inspect our facilities and sometimes I need to go down very deep into the sewers. I just hold on tight and try not to notice anything on the way.

What qualities do you admire in a man?

Ambition and curiosity. Putting your full commitment into something, whether it's personal or professional. Young men, in particular, do that. I try to live up to this quality myself.

What qualities do you admire in a woman?

When intelligence, humor, beauty and elegance come together. We call it "tierna" in Spanish.

What do your friends like about you?

They say I'm always in a good mood. Even as a child I had a sort of a role: if my cousin fell down and started crying, I'd be the one to make her laugh again.

And is there anything you can only bear with a healthy dose of humor?

People often say: "Ah, you're Latin American, you must be able to samba!" I find all those kinds of clichés pretty stupid.

What do you think is overrated?

Big cars. And in Germany, precise answers. People there always want to make extremely precise statements, then they're happy. In Latin America, a conversation is not so much about exchanging facts, it's more about keeping up contact, about empathy. In German they call that "quatschen" – and it's like a dirty word.

What have you abandoned all hope of?

Becoming a good musician. I can play a total of two songs on the guitar.

Do you have a role model?

Tennis player Roger Federer: he's been successful for so long, yet he's still got his feet on the ground.

What's your favorite activity?

Playing tennis. And kissing my girlfriend.

Interview **EVA WOLFANGEL**

Photo **MATTHIAS HANGST**



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