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Bilfinger Berger Magazine

CLOSE UP

A look at the proximity principle.

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A DIAMOND IN WHAT USED TO BE A ROUGH AREA: NEIGHBORHOOD CENTER IN THE HOLMBLADSGADE DISTRICT OF COPENHAGEN. THE NEW MEETING POINT IS THE RESULT OF CLOSE COOPERATION BETWEEN DESIGNERS AND RESIDENTS.

THE PROXIMITY PRINCIPLE

The closer you get to customers, the clearer you see. That was the case in Halle where we were awarded a PPP project to redevelop several schools that we are now also operating. One of the principals energized us with his enthusiasm for interactive whiteboards. Together we found a way to equip his school with the new technology — even though there was no budget available.

Bilfinger Berger values and maintains close relations with its customers. Take South Africa, where we have been doing business for 40 years. We are successful because we make a point of getting to know the culture and the economic environment. That's why state-owned South African power company Eskom relies on us to help develop its generating capacities.

Another lesson on the proximity principle comes from Copenhagen, where local residents joined forces with local authorities to plan and finance the renewal of their rundown neighborhood. Involving residents was the key to success. In fact, this excellent example of urban development received the Bilfinger Berger Award 2009. The closer we are, the easier it is to see details that are invisible from a distance. Proximity, however, also enhances our view of the whole. Which is more important than ever in our globalized world.

Yours sincerely,

HERBERT BODNER
Chairman of the Executive Board of Bilfinger Berger AG

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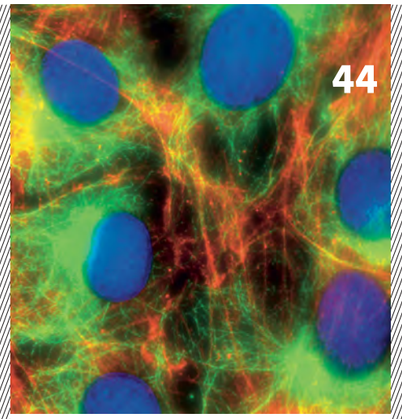
TRAINING IN SOUTH AFRICA

SIX STEPS TO HOLLYWOOD

DIGITAL WHITEBOARDS

AUSTRALIAN SMART METER



LIFE IN THE CELL

COVER STORY /// **CLOSE UP**

/// NEWS

HOWDY NEIGHBOR!

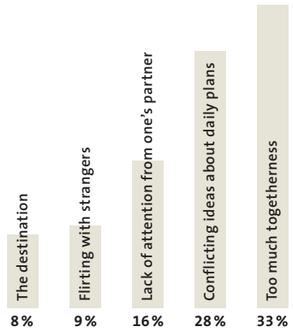
Of all the types of noise caused by your neighbors, which bother you the most?

Arguing	30 %
Music	26 %
Screaming kids	21 %
Lawn mowing	12 %
Love making	11 %

Source: Immowelt

HAPPY TOGETHER?

Not every vacation is blissful. Couples fight over:



Source: Parship, survey with 2,500 respondents

I PHONE, THEREFORE I AM

"Honey, I'm just calling to say that I'll call you later!" The world over, more and more mobile phones are being used for both important and superfluous calls. Number of mobile phone customers worldwide:

2006	2.7 bn.	+ 21 %
2007	3.3 bn.	+ 22 %
2008	3.9 bn.	+ 18 %
2009	4.4 bn.	+ 12 %
2010	4.8 bn.	+ 9 %

Source: BITKOM, EITO

DON'T GET TOO CLOSE

Photo: Silke Körber / photocase

People need closeness — and distance. Individuals normally only allow those who they know to approach their intimate zone, which, in Western societies, has a radius of around **50 centimeters**, according to psychologists. Should an unfamiliar person invade this zone — for example, in an overcrowded train or in an elevator — we tend to avoid eye contact and send nonverbal signals that roughly translate to: "Hey, move away from me!" Conversations typically take place in the personal zone, which is defined by a distance of around **0.5 to 1.5 meters**. In this "handshake range" we don't feel threatened. The social zone is where a lot of job-related contacting takes place: This zone represents the distance between the workplace and the visitor's chair, as well as the distance to the boss at meetings around the conference table: **1.5 to 3.5 meters**.

UNTIL DEATH DO US UNITE

An American widow recently put the burial place of her deceased husband up for sale. His mortal remains are in a crypt in Westwood Village Cemetary in Los Angeles, directly above the final resting place of Marilyn Monroe. When her husband died, some 23 years ago, the widow followed his wishes and buried him face down — looking at Marilyn Monroe's grave, so to speak. Of late, however, she needed cash to pay the mortgage on her house: during an auction at Ebay, the offers for the grave quickly soared. In the end, a man from Japan was the highest bidder with 4.6 million dollars. But the widow's joy was unfortunately short-lived: "I actually don't have enough money," the bidder sheepishly wrote, canceling the whole deal. The widow is now on the lookout for another buyer.

BIG WORDS

"Friendship involves the art of distance, just as love involves the art of closeness."
Sigmund Graff, German writer

"If you wish to have joy from the whole, you must become acquainted with the whole in its smallest parts."
From Goethe's "Faust"

"I've had a lot to do with adults and have often had the chance to observe them up close. Which hasn't done much for my opinion of them."
From Antoine de Saint-Exupéry's "Le Petit Prince"

VIRTUAL CLOSENESS

Where exactly is the summer house located? And what does it look like from high above? What do fish actually see in the depths of the sea? With Google Earth software, the vastness of the world can be brought up close on a home computer screen. Whether 3-D underwater views or old master paintings from the Prado — practically nothing on the virtual globe remains hidden. Since the presentation of the first version of the free software in 2005, more than 500 million people have downloaded the program.

http://earth.google.com/

HUGS I

Complete strangers hug and fondle each other. Sex, however, is taboo: Those in need of affection visit the "cuddle parties" to fulfill their need for bodily contact. The list of events is long. **www.kuschelparty.com**

HUGS II

In modern times, there's too little bodily contact, according to "Free Hugs Campaign" activists. The idea launched in Sydney by the Australian Juan Mann quickly reached cult status. Throughout the world, activists are stationed on streets and in pedestrian zones, where, with the help of a sign, they offer "free hugs" to total strangers.

www.freehugscampaign.org

Photo: Chinpira / photocase

TIGHT TRANSPORTATION IN TOKYO

With an annual ridership of around 2.9 billion people, Tokyo's subway system is the most frequented in the world. The system transports 7.8 million passengers daily. Under these crowded circumstances, women are often the victims of sexual advances. Therefore, during rush-hour periods, a few subway cars are reserved exclusively for women. No men allowed.

THE SPIRIT OF RENEWAL

THE URBAN DEVELOPMENT PROJECT IN THE HOLMBLADSGADE DISTRICT OF COPENHAGEN HAS WON THE BILFINGER BERGER AWARD. A VISIT WITH SOME HIGHLY COMMITTED DANES.

BERND HAUSER / TEXT /// **UFFE WENG, ULRIKE SCHACHT** / PHOTOS

RECREATION TIME AT THE MARITIME YOUTH CENTER. "WE WANT TO BOOST THE CHILDRENS' CONFIDENCE," SAYS CENTER MANAGER ERIK HAUERBERG.

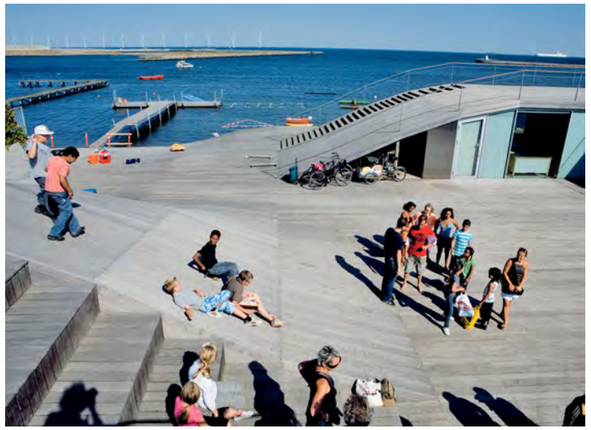
/// Erik Hauerberg, the 49-year-old manager of the Maritime Youth Center has set a few pots in the shallow waters of the Oresund. Overnight he has caught dozens of shore crabs. Now Hauerberg, a wiry man with steel-blue eyes glinting in a deeply bronzed face, is letting them go a few at a time at the water's edge. They make a comical sight as they scuttle across the sandy ground in a bid for freedom. "Ready, steady, go!", cries Erik. Urged on by their school friends, the waiting boys and girls fish for the crabs with their bare hands. Whoever catches the most is the winner. Now and then a shrill yelp is heard, more of fright than pain: Those not careful enough to catch a crab from behind soon discover how sharp their pincers are.

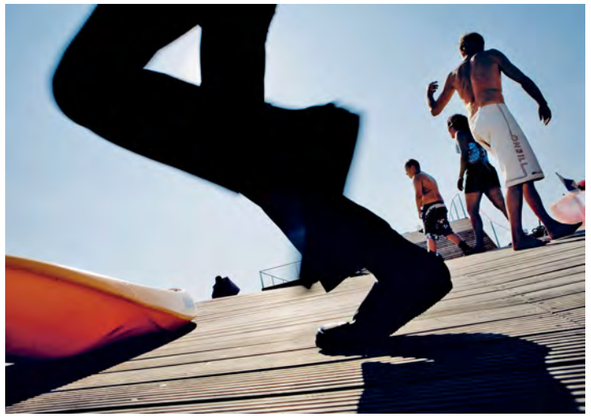
HARDY DANES

In the afternoons children in Denmark generally go to a "Fritidsklub," a kind of after-school club. On this occasion around 30 children accompanied by their supervisors from the clubs in the Holmbladsgade district have come to visit the Maritime Youth Center. It is apparent that these children do not come from average families. Almost all the boys are heavily overweight — in a country where parents are usually at pains to ensure a healthy diet. Muslim girls bravely venture into the chilly water clad in headscarves, leggings and long-sleeved sweatshirts. "I can't swim!", shouts a boy from the jetty: In Denmark, where the furthest you can get from the sea is about 60 kilometers, most children learn to swim even before they learn their alphabet. "Doesn't matter, come on in, it's not deep," Erik shouts back. "And it's warm!" This hardy Dane finds 19 degrees entirely to his liking.

MIDDLE CLASSES AVOID PROBLEM NEIGHBORHOODS

"Many of the children come from problem families," says one of the club youth workers on the wooden veranda of the Youth Center: "Alcohol, violence." She has an 11-year-old daughter of her own. Would she send her to an after-school club in Holmbladsgade? After a moment's reflection the





ERIK HAUERBERG, MANAGER OF THE MARITIME YOUTH CENTER: "WE BOOST THESE YOUNGSTERS' SELF-CONFIDENCE."

youth worker answers, "Probably not." Her reply is symptomatic of the middle class in many cities worldwide: They avoid problem neighborhoods, they move away. Those who remain are those who have no choice, and the neighborhood deteriorates.

For a long time the traditionally working class district of Holmbladsgade and its 16,000 inhabitants were caught in this downward spiral. But then some committed citizens began to halt the downhill slide. Since 1998 hundreds of local residents have joined in the Kvarterløft, which literally translates as "lifting the neighborhood" — up out of the depths of neglect, vandalism and apathy. The Bilfinger Berger Award jury were so impressed by this example of urban renewal that they unanimously chose the neighborhood in the south of Copenhagen as the winner of this year's award. The Maritime Youth Center is one project that came to symbolize the Kvarterløft: This is the only place where many local children have the chance to play water sports and enjoy physical activities. "We try to boost their self-confidence," says manager Erik Hauerberg.

ON COPENHAGEN'S MEAN STREETS

Just how much around here has changed for the better becomes clear when dressmaker Eva Damgaard, a stocky woman of 65, recalls the old days. Towards the end of the 1980s she was attacked in the hallway of her house by unknown hooded assailants. "I didn't make it to work the next day," she remarks with wry Danish humor: She was beaten unconscious. When she came round she discovered she had a tooth missing. She suspects that her efforts on behalf of refugees in the district fell foul of right-wing extremists. Later in the mid 1990s the police came knocking

EVA DAMGAARD PAINTS IN HER GARDEN. BEHIND THE FENCE WAS ONCE THE DEALERS' TERRITORY. NOW MOTHERS PUSH THEIR PRAMS THERE.

DORTE MANDRUP DESIGNED THE NEIGHBORHOOD CENTER — TOGETHER WITH THE RESIDENTS. "YOU HAVE TO TRY TO SATISFY PEOPLE'S WISHES — AND EXPLAIN CAREFULLY IF THAT DOES NOT PROVE TO BE POSSIBLE," SAYS THE ARCHITECT. "A LOT OF WORK, BUT WELL WORTH THE EFFORT."

HOLMBLADSGADE IS AN OLD, DENSELY DEVELOPED WORKING CLASS DISTRICT.

NEW LOOK: THE NEIGHBORHOOD CENTER AROSE OUT OF A FORMER CANDLE FACTORY.

THE NEIGHBORHOOD CENTER IS ALSO HOME TO THE DISTRICT LIBRARY.

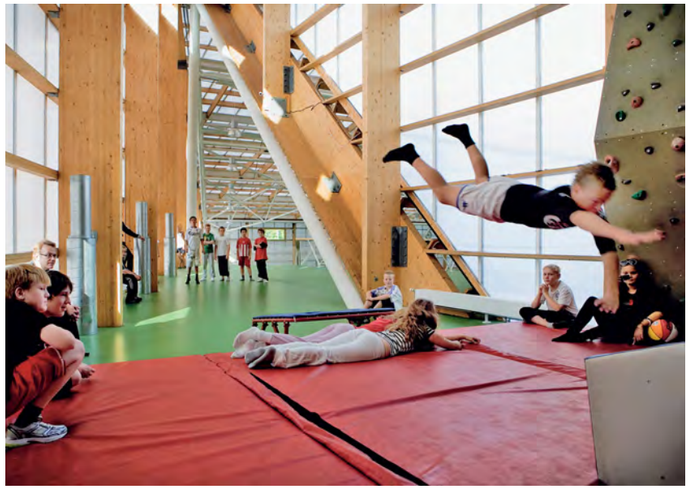
on her door. Had she seen anything? A 16-year-old girl had been raped right in front of her garden fence. "In the past people didn't used to admit they lived here, on Copenhagen's scrap heap," says Eva Damgaard. By night the dark corners belonged to the drug dealers. Drunks staggered through the streets where ordinary folk were ill at ease.

THE NEW HEART OF THE NEIGHBORHOOD

Ten years later the picture is very different. The dealers are gone. New streetlights illuminate the area. Young men and women can be seen pushing prams though the streets. The cheap bars that once dominated the scene have been overtaken by greengrocers, jewelers, sports shops — and some outstanding architecture. Not just the Maritime Youth Center whose rounded shape is reminiscent of waves and whalebacks. There is also the Prism sports center where the imposing roof design of beams and frosted glass lets in a flood of light. And there is the new Kvarterhuset, or neighborhood center: A former candle factory has been transformed into a transparent cube that seems to hover above dozens of slender columns. This is the new heart of the neighborhood where a thousand people come and go each day. They borrow books from the district library, enjoy refreshments in the café, attend concerts, self-help groups, or children's singing groups. The local district newspaper has its editorial offices here, there are homework sessions, physiotherapists and career advice for young people.

NO SUPPORT WITHOUT CONSENSUS

New life has been injected into this neighborhood. Why did this attempt succeed where others have failed? "Above all it was because of the "Ildsjaele," the ones with fire in their souls who made such a commitment," explains Eva Damgaard. Citizens like her who devoted themselves heart and soul to the years of planning needed to develop the optimum proposals. People power became the driving force of the Kvarterløft. Dozens of committed residents met as working parties often several times a week for months and even years. Their findings on issues of housing, transport, culture, sport and youth were signed off by a steering committee comprised of officials from the city authorities and representatives of local interests ranging from



JUMPING FOR JOY: THE PRISM SPORTS CENTER KEEPS CHILDREN AND YOUNG PEOPLE ACTIVE AND OFF THE STREETS.

SCHOOL CHILDREN PLAY BADMINTON, A DANISH NATIONAL SPORT. THE PRINCIPLE BEHIND THE NEW SPORTS CENTER IS TO PROVIDE OPPORTUNITY FOR AS MANY ACTIVITIES AS POSSIBLE.

schools and kindergartens, local traders, homeowners and tenants to political parties. "The principle of consensus was decisive for the success of the initiative," explains architect Thomas Christoffersen, who coordinated the renewal project together with project manager Jørgen Sprogøe Petersen on behalf of the city. "Without consensus there could be no financial support: An excellent incentive to reach a compromise."

FOR THE RESIDENTS, WITH THE RESIDENTS

Take, for example, the renovation of local housing: Prior to the renewal project, a third of the homes in Holmbladsgade had no bath and shared a toilet with the neighbors. Some of the mainly five-story buildings had no inside lavatories at all and relied on latrines in the courtyard. Renovating these properties became the biggest item on the renewal list. Out of a total of 47 million euros in public funding, 70 percent was given over to refurbishing the houses, many of which were organized as cooperatives. But the money was not forthcoming until the shareholders in the cooperative had settled, sometimes only after lengthy discussion, on precise plans and agreed upon a financing concept. Only when the owners could prove that they themselves could cover around half the costs by way of bank loans would the national and local governments then contribute the other half. In this way the authorities not only succeeded in having 42 properties renovated in a manner that was cost-effective and fit for purpose. "They also reawakened a feeling of pride of ownership," explains Jørgen Sprogøe Petersen. "Because the residents were investing their own time and money, they began to re-identify with the neighborhood."

THE COMMON GOOD COMES FIRST

Of course there were conflicts. Those living close by the planned sports hall were worried about noise. The local squash club wanted its own court in the hall. But the neighbors were won over and the squash players understood that their court did not fit in with the concept. The object was to promote mass sports for schools and the

PROMOTING THE EXCHANGE OF KNOWLEDGE

THE BILFINGER BERGER AWARD

It's not always necessary to reinvent the wheel: There are urban planning solutions developed here and there, tried, tested and successful, that could serve as a model for others. But planners elsewhere know nothing of them. So they rely instead on old methods and processes, and achieve less than perhaps they could. This is where the Bilfinger Berger Award comes in. The award, presented this year for the second time, is intended to promote the exchange of knowledge and experience in the field of urban planning and provide new impetus for Germany.

Scientists at the Prognos-Institut evaluated 120 projects from around the world and submitted the most exciting potential model solutions to a jury chaired by Professor Klaus Töpfer, the former Director of the United Nations Environment Programme. The jury unanimously decided to award the prize of €50,000 to the "Kvarterløft Holmbladsgade" urban renewal project in Copenhagen. "The project shows that well-organized participation by local residents is essential," said Klaus Töpfer in praise of the initiative. Herbert Bodner, Chairman of the Executive Board of Bilfinger Berger, was impressed with the way in which "the various interest groups sought solutions in partnership rather than antagonizing one another as is frequently the case in Germany."

Reporting on the award ceremony, the Süddeutsche Zeitung remarked that the Bilfinger Berger Award "is not one of those awards that glorify the patron like sponsoring a golf tournament: It is a socially oriented award of a kind we should see much more often."

OLE PEDERSEN (TOP LEFT) AS HEAD OF THE RESIDENTS' COMMITTEE IN HIS OFFICE IN THE NEIGHBORHOOD CENTER PROVIDES FOR MORE DIRECT DEMOCRACY.

ON FOOT, ON TWO WHEELS OR FOUR: 1,000 PEOPLE A DAY VISIT THE NEIGHBORHOOD CENTER, THE NEW HEART OF THE AREA.

RESIDENTS SET UP AN ASSOCIATION TO PROMOTE SPORTS ACTIVITIES FOR YOUNG PEOPLE. ITS CONSTITUTION STATES: "WE LOOK FOR YOUNG PEOPLE IN THE PLACES THEY ARE MOST LIKELY TO BE FOUND," IN OTHER WORDS, ON THE STREETS. THE CITY HELPS BY FINANCING A SOCIAL WORKER.

general public, not special interests. "Danish society has been shaped by over a hundred years of workers' rights and democracy," explains Ole Pedersen, who engineered the compromises reached by the sports center committee. "We learn from the cradle up to regard others not as opponents but as partners and think of the common good."

THE FIGHT FOR THE NEIGHBORHOOD GOES ON

Ole Pedersen is a friendly 66-year-old with a gray beard, given to wearing Birkenstock sandals on his sockless feet. At 14 he went to work in a factory. Then in his early 30s he retrained as a youth worker and spent the next 32 years wiping snotty noses, as he puts it, in the local children's centers. Now retired, he has taken on a new task: he heads the Lokaludvalg, the residents' committee. Not least because of the experience gained with the Kvarterløft, Copenhagen has set up bodies like this in every city district with their own offices and budgets to act as a link between citizens and administrators in the interests of a more direct democracy and participation. "Along the coastal fringe of our district there are a lot of derelict industrial sites. So we are working on a development plan," Pedersen enthuses. Eva Damgaard is someone who he regularly encounters at meetings: "The ones with fire in their souls are back again."

The latest coup for Pedersen and his committee is the acquisition of a neighborhood motor boat. It is now anchored off the Maritime Youth Center and local clubs and youth organizations are queuing to book it. Birdwatchers use it to cross over to Saltholm, an island bird reserve in the Øresund. And Youth Center manager Erik Hauerberg takes parties of children and teenagers out fishing, many of them for the first time in their lives. In spring they catch garfish, in late summer mackerel, in winter cod, and plaice all year round. These are the kind of childhood experiences the Danes appreciate. The children of Holmbladsgade deserve them too. //

THE INHABITANTS OF HOMBLADSGADE PROTECTED THEIR NEIGHBORHOOD FROM RUIN. A REPORT ON THE WINNERS OF THE BILFINGER BERGER AWARD 2009.

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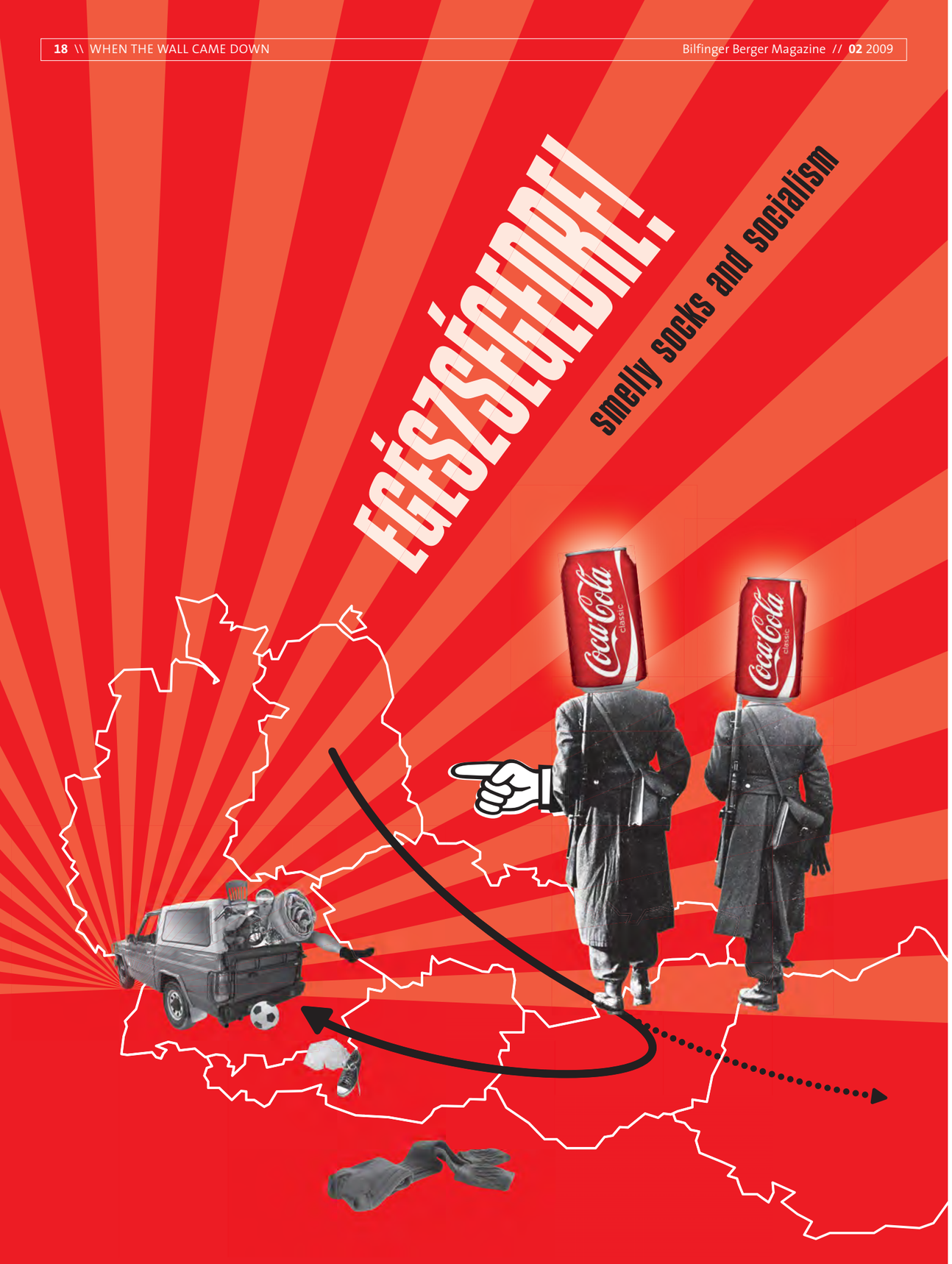


20 YEARS AGO THE BERLIN WALL CAME DOWN. AUTHOR PHILIPP MAUSSHARDT RECALLS THE TIME HE HELPED A FRIEND ESCAPE FROM THE GDR.

/// On the day the Wall came down, the roasted chestnuts seemed to lose their flavor.

This might be my last chance to tell this story. Who knows if anyone will still be interested ten years from now? On the 50th anniversary of the day the Wall came down, they'll probably roll me into the assembly hall at some local elementary school. "This is old Mr. Mausshardt," the principal will announce to the children, "he's going to tell us what it was like back then." Back then, on November 9, 1989, to be precise, I was sitting in front of the fire with my friend Axel. The phone rang and when I had hung up, the chestnuts seemed to lose their flavor. Yes, that's what it was like back then.

The idea of helping get Axel from East Germany to the West occurred to my girlfriend and I the first time we met him in Dessau in '88. Such a nice guy and such a wicked regime — not exactly a match made in heaven. Friederike offered to marry him, I agreed, but a lawyer skilled in such marriages of convenience advised against it: It would take years. "The trunk?" I asked Friederike. "The trunk," she agreed.

Those who remember the controls at the German-German border will understand why we chose to take a detour. The gruff customs officials with their rustic accents would have had no trouble discovering our stowaway. The Hungarians, on the other hand, were the smooth operators of the Socialist world, "egészségedre! — cheers, let's have another." The GDR, however, had so little faith in Axel as one of its citizens that they weren't prepared to give him a visa — not even for Hungary.

Our efforts appeared in vain until the early summer of 1989 when a friend wrote to say that Axel had a visa for a vacation in Romania. Romania staunchly toed the party line. But the train to Romania had to pass through Hungary! "Operation T" was on. "T" as in trunk. I took the car apart and stowed two walkie-talkies behind the door trims. I'm not sure any more just what we were supposed to do with them, but when you're planning an operation like that for the first time, you do the oddest things. We were, after all, new to the game of smuggling people out from behind the iron curtain in the trunk of a car.

We met at the railway station in Budapest. Axel was feeling a little uneasy. So were we. Since Axel didn't have a visa, we spent the night in a wooded area. The next morning was hot and sunny. We packed Axel in the trunk and covered him with dirty underwear, rank sleeping bags and clutter. On top we placed a few ice-cold cans of Coke.

Hungarian customs officers are only human and as they started to rummage through the chaos in the trunk on such a hot day, their hands quickly encountered the cool cans. "Please, help yourselves," I said, indicating they should keep these thirst-quenching cans as a gesture of international friendship. They immediately stopped rummaging and passed us through with a friendly wave. It was that easy. When Axel's head next appeared from beneath the chaos, we were in Austria.

That was July, four months before the Wall came down. On November 9, Axel and I were relaxing at a farmhouse in Tuscany. In the hearth a fire was blazing and we were roasting the chestnuts we had gathered earlier in the woods. The phone rang. It was Axel's sister in Dessau. The border was open, she said, now anyone could come across. Just like that. //

THE POWER OF OPPORTUNITY

ENERGY IS IN SHORT SUPPLY IN SOUTH AFRICA AND THE COUNTRY NEEDS NEW POWER PLANTS. BILFINGER BERGER POWER SERVICES IS EXPANDING ITS CAPACITY AND BRINGING BOTH JOBS AND THE LATEST TECHNOLOGY TO PRETORIA.

SARA MOUSLY / TEXT /// **ERIC VAZZOLER** / PHOTOS

/// Gladness Mampa is 22. Her hair is hidden beneath a red cap and the blue coverall hangs loosely on her slender arms. Working as an apprentice with Bilfinger Berger Power Services, with fixed concentration she welds narrow steel tubes into the complex patterns utility giant Eskom has ordered for its new Medupi and Kusile coal-fired power stations in the north east of the country.

Gladness Mampa recalls two occasions when fortune smiled on her. The first was when her father paid for her alone among his seven children to go to grammar school. The second was when she was serving drinks at a trade fair and learned by chance that Bilfinger Berger Power Services was training young people in Pretoria. A rarity in South Africa, where there is no obligation for companies to offer apprenticeships. Gladness phoned immediately, and soon after was hired as a trainee. For the past year she has been learning to use grinders, welding guns and even the big traveling cranes that can lift twelve-ton loads. "In two years I will be a boilermaker and earn more than my father," she says and smiles shyly. Her father is very proud of her, she adds.

CUTTING, WELDING, BENDING

Next door to Gladness Mampa's boiler production plant, a huge new facility is taking shape: A copy of a plant in Dortmund where Bilfinger Berger Power Services produces high-pressure pipes for power stations. Power Services is the European market leader. Soon, the company will be cutting, welding and bending pipes not just in Germany's Ruhrgebiet but also in South Africa. These pipes are huge, up to 85 centimeters in diameter with wall thicknesses of up to ten centimeters. They must withstand temperatures up to 600 degrees Celsius as steam gushes from boilers to turbines. The pressure inside the pipes can reach 280 bar, a hundred times as much as a fully inflated car tire.

To coax this highly stable material into shape, the power station builders in Pretoria have ordered a bending machine similar to the one in Dortmund. This expensive and highly specialized piece of equipment is due to arrive in South Africa in the new year. Bilfinger Berger is investing a total of €11 million in the new plant, including the training of skilled workers. Why such expenditure when the technology is already available in Germany?

NO ELECTRICITY, NO GROWTH

"There is a boom ahead for South Africa's energy suppliers," says Salvador von Neuberg, 64, manager of Bilfinger Berger Power Services in Pretoria. "Our contract for the new Medupi and Kusile coal-fired stations alone is worth €85 million." With 36 years of experience in the power station business in South Africa, von Neuberg is confident there are more orders to come. "There have been no new facilities built here for almost 20 years." Despite the fact that between 1985 and 2007 electricity consumption nearly doubled. The economy flourished and the platinum, gold and chromium mines grew steadily. Such mines require vast amounts of electricity, with the result that energy supply bottlenecks have been occurring for some years now. The shortage of electricity is restricting economic growth, as whole townships are left in darkness from time to time.

An end is now in sight. The South African government is investing in the energy sector and attracting highly specialized technology providers to the country — Bilfinger Berger's high-pressure piping experts among them. When contracts are awarded, however, preference is given

GLADNESS MAMPA SEIZED HER OPPORTUNITY. SHE IS LEARNING TO BE A BOILERMAKER, LATER SHE WANTS TO GO TO UNIVERSITY.

MANAGER SALVADOR VON NEUBERG (BELOW LEFT) IS BRINGING THE MANUFACTURE OF HIGH-PRESSURE PIPING TO SOUTH AFRICA.

NO MORE APARTMENT, NO MORE CAR: BENDING SHOP FOREMAN PETER GODLER IS OFF TO SOUTH AFRICA WITH A THREE-YEAR CONTRACT. ENGINEER ANDREAS NIEHAUS WILL BE IN CHARGE OF WORK PLANNING AT THE NEW PLANT.

to companies that manufacture in South Africa rather than importing components. "If we hadn't offered to build the new factory and create 200 new jobs in Pretoria, we wouldn't have won the order," says von Neuberg.

RETIREMENT MUST WAIT

If the complex bending technology is to be made to work in Pretoria, not only modern machinery but also the accompanying expertise must come to the Cape. So there is plenty of to-ing and fro-ing of employees between Germany and South Africa.

In Dortmund, Gerd Seidel is getting ready for his trip to Pretoria. At the age of 65, after working for years at Bilfinger Berger Power Services as quality manager and sharing in the development of bending and welding technologies, his pension beckoned. But he put retirement on hold for the chance to get the new facility up and running. His instructions on a wide range of technical processes are even now being translated into English. He will be there in Pretoria when the bending machine is set up. But at the moment Seidel is still in Dortmund, strolling through the plant between steel pipes large enough for children to play hide-and-seek in. He stops in front of a green-painted steel colossus. "This is the inductive bending machine," he says, "the heart of the place."

NO MORE APARTMENT, NO MORE CAR

Peter Godler, 55, uses a crane to hoist a twelve-meter long pipe into the machine the size of a locomotive. Then he fits a narrow copper ring a few centimeters in width around the pipe at the point where the bend must begin. The ring is an induction coil — pass electricity through it and the pipe beneath begins to glow. Moving in ultra-slow motion, the front part of the machine, the "bending arm," describes the required curve, as the pipe is forced through the copper coil, millimeter by millimeter. It can

BILFINGER BERGER POWER SERVICES IS LOOKING TO THE NEXT GENERATION. THE NEW PLANT WILL BRING 40 APPRENTICESHIPS AND NEARLY 200 JOBS.

SOUTH AFRICA

POWER SHORTAGE PUTS THE BRAKES ON GROWTH

South Africa is the continent's engine of economic growth. But since 2007, its development has been increasingly hampered by the failure of power supplies to keep pace. Emergency outages have crippled whole industries, particularly the energy-intensive mining sector. The Medupi and Kusile power stations, due to come on stream in stages between 2011 and 2017, are expected to substantially close the gap. With six 850 megawatt blocks each, they will be among the largest in the world. Bilfinger Berger Power Services is manufacturing components valued at around €85 million for the two stations. **(si)**

GERD SEIDEL WAS GETTING READY TO RETIRE. BUT HE PUT IT ON HOLD FOR THE CHANCE TO SET UP THE PLANT IN SOUTH AFRICA.

take up to ten hours to bend one of the huge pieces into shape, Peter Godler explains. He has given up his apartment in Mülheim, sold his car. At the end of the month he will also be off to South Africa with a three-year contract as bending plant foreman in his pocket.

EVERY WELD IS DOCUMENTED

South African employee Liana Svanepoel has come to Dortmund from Pretoria. She will be responsible for quality assurance at the new plant. If a customer takes delivery of a defective pipe, there must be an audit trail to discover whether the material, the workmanship or the conditions in transit were at fault. For this reason, every pipe processed by Power Services is stamped with a number. Each individual weld seam is marked to show who worked on it and when. Hundreds of work stages are precisely documented, and Liana Svanepoel's task in Pretoria will be to keep track of them all: "Here in Dortmund I am reading myself in, so to speak, but I'm also talking to lots of other people so I can understand how they work here." Back in Pretoria she will then explain the complex procedures to her own staff.

WHERE ARE THE YOUNG BLACK ELITE?

Liana Svanepoel is white, as are almost all her senior management colleagues at Bilfinger Berger in Pretoria. Many of them are South Africans, but where are the young black elite? "In the course of time more and more management positions will be held by blacks," Salvador von Neuberg believes. Thanks not least to the Black Economic Empowerment legislation passed by the government headed by Thabo Mbeki in 2004. The law requires that the composition of a company's workforce must reflect the ethnic composition of the country itself. "That's not something we can achieve overnight," says von Neuberg. One of the reasons is that for decades it was predominantly whites who had access to universities and higher education. A qualified black middle class is only now emerging, and engineers in particular are in short supply for the time being.

"Now, however, there is a new, self-confident generation on the rise, and we are training them," says von Neuberg. The new plant in Pretoria, due to start production in spring 2010, is contributing 40 new apprenticeships to the country's capital city. For many talented young people these offer a way out of the cycle of poverty in which their parents were trapped.

22-year-old Gladness Mampa has high hopes. "I want to keep on growing and learning," she explains. "Most of all, after my apprenticeship I would like to study and be promoted to departmental manager." She is quick to learn, she adds, and strong too. "Then when young girls see me, let them think, I would like to be a lady like that." //

LIANA SVANEPOEL IS SPENDING THREE WEEKS IN DORTMUND. SHE WILL BE THE QUALITY MANAGER AT THE NEW PLANT IN PRETORIA.

TECHNOLOGY FILM: HOW STEEL PIPES GET INTO SHAPE WITH INDUCTIVE BENDING.

FOOTBALL FANS: WHAT EMPLOYEES IN SOUTH AFRICA EXPECT FROM THE WORLD CUP.

www.magazine.bilfinger.com

BILFINGER BERGER POWER SERVICES

A HISTORY OF COMMITMENT

Bilfinger Berger Power Services has been active in South Africa for 40 years, focusing on services for coal-fired power plants. These services include assembly, commissioning, modernization and conversion. The company manufactures most plant components directly in South Africa, including fittings, boiler parts and piping systems. The fact that Bilfinger Berger Power Services trains its South African employees at the company's own facilities is well worth the effort: Many have remained with the company for decades. **(si)**

“WE DON’T WORK FOR DUMPING PRICES”

BILFINGER BERGER POWER SERVICES RELIES ON ITS OWN PEOPLE INSTEAD OF PURCHASING SERVICES FROM THIRD PARTIES. AN INTERVIEW WITH CHIEF EXECUTIVE GERD LESSER.

SARA MOUSLY / INTERVIEW /// **ERIC VAZZOLER** / PHOTO

GERD LESSER.
HIS BUSINESS KEEPS GROWING EVEN IN TIMES OF CRISIS.

Mr. Lesser, I recently asked a group of friends what they associated with the name Bilfinger Berger. And do you know what their answers were? Tunnels, bridges and office blocks. Not one of them came up with power station technology. Does that bother you?
Our division is less well known to the general public because our name doesn’t appear on countless construction-site signs dotted around city centers and motorways. Fact is, the services business is becoming increasingly important for Bilfinger Berger. And Power Services is the division generating the highest earnings.

People tend to think of “services” as relatively simple tasks that clients don’t want to bother with.
That is quite wrong. Of our 6,900 employees, 2,000 are engineers and a lot of them are technicians and skilled workers.

And what exactly do they do?
We work for coal and oil-fired power stations and nuclear plants. We develop and manufacture coal pulverizers, combustion plants, boilers and the high-pressure pipes that carry steam to the turbines. We also supply systems that remove harmful substances from the exhaust gas. We bring old stations up to the latest standard to make them safer, more environmentally friendly and more economical.

Your company is growing despite the crisis in the global economy. How so?
Power plant operators know that they can rely on us 100 percent, simply because we produce and install almost everything ourselves. We also provide the engineering. We are familiar with the latest developments in power plant technology. And we are involved in a number of important research projects.

Would it not be more profitable to buy in specialized services rather than keeping everything in-house?
We can only be sure that our products are top quality and delivered on time if we do the vast majority of the work ourselves. That is worth a great deal to our clients, especially in times of crisis. Imagine a 1,000 megawatt power station. Every day that it is shut down represents a huge loss to the operator. We do everything we can to make sure the client can rely on us. On the other hand, that also means that we do not work for dumping prices.

Isn’t that a risky strategy?
No, it pays dividends. We have substantially increased our output and our results relative to 2008. With one small exception, the acquisition of an industrial installation company in Croatia, this has all been organic growth. In other words, growth we have achieved through our own efforts. And when it comes to high-pressure piping systems, we are number one in Europe.

What about markets outside of Europe?
There will be strong demand in South Africa for decades to come. Energy is in immensely short supply because economic developments were underestimated for a long time. Entire factories simply cannot be built because there is no electricity. And South Africa also opens a window for us into other African countries.

Almost all your South African managers are white. Is that in tune with the times?
First of all, besides a balanced employment structure, the South African government also specifies that a large proportion of the shareholders must also be black. In that respect we have come a long way. Our companies in South Africa are thirty percent black-owned.

Fine, but why don’t you have black managers?
Unfortunately there are still too few South Africans with the proper training, regardless of the color of their skin. The training and employment market simply cannot keep pace with the headlong development in the energy sector. That’s why we are now sending German staff to South Africa who will then gradually be replaced by local employees. To a large extent we are training these people ourselves. In welding and assembly work, we are the largest training provider in South Africa. And in high-pressure welding we are the only provider.

Are there other interesting markets abroad?
At the moment we are thinking mainly about Australia. We are talking to our colleagues at Bilfinger Berger Australia who have been in close contact with power plant operators for decades. We have agreed to contribute our expertise so that we can jointly generate new business. Russia and India are also attractive. Clearly, to minimize the risk we are only going to become active in countries we are familiar with, for example via local partners.

Do power plants abroad meet the same standards as those in Germany?
The Medupi and Kusile coal-fired plants that we are supplying in South Africa have a 44 to 45 percent rate of efficiency. That’s state-of-the-art. We are also currently trying to convince the South Africans to install flue gas purifiers. Desulphurization units are obligatory here, but that is not yet the case in South Africa.

Are coal-fired power plants at all compatible with climate protection?
Yes. Of course the energy balance has to be improved, because a lot of the measures to protect the environment are at the expense of efficiency. The challenge lies in finding materials that can withstand the increase in temperature and pressure that we need to achieve a greater level of efficiency. Carbon capture and geological storage techniques also offer attractive prospects. Incidentally, we built the flue gas purification system for the first CO_2-free experimental power plant.

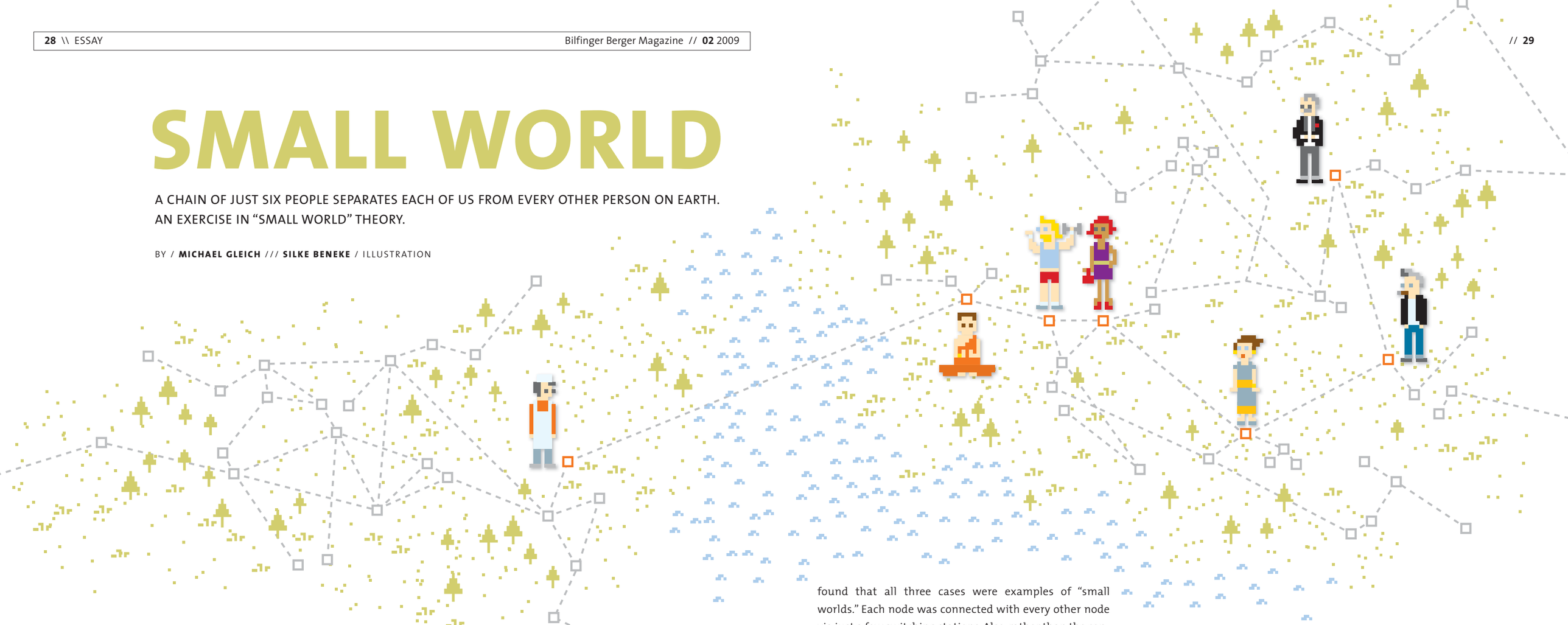
Resistance to large-scale power plants is rising in Germany. Would we perhaps be better off with remote heat and power plants serving local communities?
Life is a series of compromises. In future there will be a mixture. Localized energy systems are gaining ground and we are aiming to develop a product of our own: micro gas turbines in the order of around 250 kilowatts. These would be suitable for hospitals, schools or small factories. We intend to go into production in 2011. However, we are also involved in the field of nuclear fusion, for which we are developing sophisticated superconducting magnets. CERN is one of our partners.

What will the key energy source of the future be?
Gas is finite, coal too. And biomass does not grow as fast as our energy requirements. I think that in 100 years it won’t be wind or solar energy that is of central importance, but nuclear fusion. The idea involves replicating the processes that take place in the interior of the sun. And the sun itself is proof of millions of years of energy. //

SMALL WORLD

A CHAIN OF JUST SIX PEOPLE SEPARATES EACH OF US FROM EVERY OTHER PERSON ON EARTH. AN EXERCISE IN "SMALL WORLD" THEORY.

BY / **MICHAEL GLEICH** /// **SILKE BENEKE** / ILLUSTRATION



/// The death of Marlon Brando had a particular effect on falafel vendor Salah ben Ghaly in Berlin. As a former art school student he had always admired Brando: "He played himself, and that is incredibly hard to do." The Iraqi exile and the Hollywood movie star never actually met, but they came close. How? Through an experiment conducted by the weekly newspaper "Die Zeit." The paper set out to show that the citizens of our planet are closer to one another than they realize, and chose the link between Ghaly and Marlon Brando as its example. The experiment aimed to prove a connection between them via a chain of just six friends and acquaintances. A time limit of a matter of weeks only served to heighten the suspense.

NETWORKS WORK TO RULES

The game had its origins in scientific theory. It was developmental psychologist Stanley Milgram who first drew attention to the "small world phenomenon." His investigations of human networks in 1967 revealed that individual members of cliques and circles of friends had stronger connections to one another than outsiders (which was to be expected) and that the patterns of inhomogeneous networking in disparate groups are nevertheless similar (which was a big surprise).

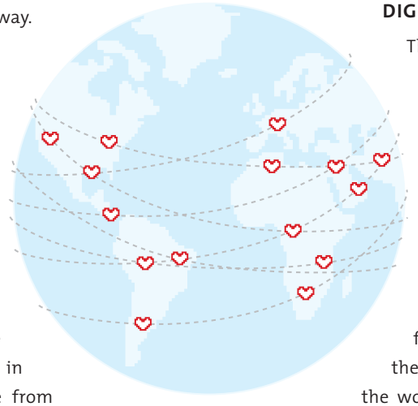
Since the end of the 1990s, attention has once again been focusing on the "small world phenomenon." Sociologist Duncan Watts and mathematician Steven Strogatz took a closer look at the structure of widely differing networks, armed this time — thirty years on from Milgram's day — with powerful computer modeling systems. The objects of their investigations were the nervous system of the worm caenorhabditis elegans, the power station network in the western states of the USA and the connections between actors appearing together in the same films. They found that all three cases were examples of "small worlds." Each node was connected with every other node via just a few switching stations. Also, rather than the connections being accidental, there were specific rules which produced similar patterns in all three networks. The two scientists were excited: Had they stumbled on a generally applicable law that governs complex systems? It was also clearly apparent that their findings could have economic benefits, for example in improving the operating efficiency of a wide variety of networks.

FROM BERLIN TO BEVERLY HILLS

Meanwhile, however, their study inspired "Die Zeit" to attempt to prove the "six degrees of separation" between Berlin and Beverly Hills. Which could be the first link in the Marlon Brando chain? Falafel vendor Salah ben Ghaly suggested his friend Assad Al-Hashimi who lives in California. Here, ben Ghaly was unwittingly utilizing a particular property of networks: In addition to numerous short strands, they also feature a small number of long-distance links. The long link across the pond was successful: The friend jumped at the chance to join the project. As a Buddhist he actually sees a spiritual element in the idea that all human beings are networked: "I believe that all living creatures are linked to one another." He (node 2) nominated a colleague he knows from his employer's gym as the next in line (node 3). The colleague's girlfriend Michelle (node 4) went to college with Christine Kutzer (node 5), who besides being a wife and mother is also the daughter of a big name in Hollywood. So as well as "normal people" she also has links to the stars — an ideal switch point in the Brando direction. Meanwhile, other journals had picked up on the search for the missing link. Newsweek and Time Magazine joined the fray.

Newspaper readers contributed the names of friends, acquaintances or colleagues who could extend the chain. An acquaintance of Christine Kutzer, Patrick Palmer who is a big player in the film business, looked to be the most promising candidate. He produced "Don Juan deMarco" with Marlon Brando. But did the two have contact with one another? His answering machine blocked progress. Palmer was away. And the clock was ticking.

The world is shrinking fast. If every individual knows a hundred other individuals (each of whom in turn knows a hundred others), then six intervening stages are indeed sufficient to network every individual on earth. Each of us will have had practical experience of the phenomenon. Let's say we are far from home, on gorilla watch in Ruanda, and we meet someone from home. Immediately the search begins for common acquaintances — "Do you know so-and-so …?" Play the game long enough, and a connecting individual is bound to emerge. There is consolation here for those in fear of globalization: A web of friendships holds the planet in its embrace. A kind of Internet of emotional connections exists, and it existed long before modems were invented. It's not fiber optics but feelings that span the globe.



ORDER PREVAILS

But this is not the reason why the "small world phenomenon" is the subject of intensive study. It was previously thought that networks were formed exclusively at random, provided only that the participants were free to create links at will. However, all of the networks investigated so far have established a specific order in a process of self-organization. A few nodes are connected by large numbers of strands, while most are linked by only a few. Remarkably, this pattern is evident irrespective whether we are talking of the network of airline routes or the web of citations that cross-reference one scientific publication with another. Some airports serve far more routes than others; some actors have appeared in many films and therefore are acquainted with more of their colleagues than, say, emerging new performers; some Internet servers handle far more data traffic than the rest. Ricard Solé, a biologist at the University of Barcelona, discovered when studying quite different biotopes (a lake, a forest, an estuary) that they exhibit striking similarities in the way they are networked. In any given ecosystem some types of animals and plants are far more interconnected than the rest and evidently function as key species. Solé is of the opinion that: "Nature evidently conforms to some universal principles of organization. If we can work these out, we may one day arrive at a general theory of complex systems."

DIGITAL ECOSYSTEM

The way in which the Internet is growing is very much like an ecosystem. Users are, as it were, surrounded by a rampant jungle, with digital thickets and clearings, beaten tracks and data highways, open portals and branching routes. Anyone can plant another tree, and every planter is free to create a few paths through the thicket. There is no authority in the world that dictates how the more than 125 billion web sites may or may not be connected with one another via links and hypertext. And yet as in a real forest, the typical "small world" structure unfolds itself, with just a small number of sites and servers playing a key role. In cyberspace it takes a maximum of nineteen clicks to get from any one place to any other. The fact that more stages are required than in human networks is attributable to a simple reality: Internet sites have an average of only seven links, whereas it would be rather sad if each of us were in contact with only seven other people.

THE BENEFIT OF NETWORK GEOGRAPHY

The advantage of this self-organized inhomogeneous structure is that it reinforces the stability of the Internet. There is a high probability that when failures occur, one of the less important nodes is affected. The system as a whole doesn't bat an eyelid. An ecosystem can cope with the extinction of individual plants and animals, the brain copes with the demise of an average of a thousand neurons per day. The Internet copes with local server crashes. The intrinsic robustness of the system can, however, only absorb faults and failures that affect one node or another at the whim of fate. It is a different matter when a network is subjected to a targeted attack. If an attacker knows the location of heavily interconnected switch points, the Achilles heels of the network, he or she can hit where it hurts. With increasing frequency, experts are warning that the feared attacks by crackers or cyber-terrorists on specific backbone servers could cripple the Web. Small world theory could help to identify the weak points, allowing us to come up with diversions and alternative routes.

Apart from security analyses such as these, there are other practical ways to use network geography:

// **Search engines** / Precise mapping of small worlds provides indications of "shortcuts," for example as aids to orientation when searching through global data networks. The ambition is to make search engines so intelligent that they can direct users to the source of the information they seek with as few clicks as possible.

// **Disease control** / The interest of epidemiologists is focused on those individuals who have a particularly large circle of friends, acquaintances and colleagues and therefore make numerous contacts on a daily basis. They are the nodes by which infections may potentially spread particularly fast. As epidemics such as BSE and foot-and-mouth have shown, a combination of factors like "contagion" and "mobility" is especially dangerous.

// **Marketing** / It has been shown in the USA that word-of-mouth recommendation is one of the most important channels through which a book achieves prominence and even bestseller status. Once again the task here is to find the readers who are most highly networked and wow them!

// **Nature conservation** / In the small worlds of ecosystems, some species play a key role. Many other species are dependent on them. On the other hand, these are generally not as one might perhaps expect the large, charismatic creatures, favorites of the public such as lions, elephants or gorillas, but small, inconspicuous species. Krill for example are a mainstay of maritime ecosystems: Without krill there would be no whales, seals, penguins. Given the threat to natural habitats and the chronic shortage of funds, small world analyses could help to concentrate conservation efforts on key species.

Networks make the world smaller, but only for those who are networked. The distance between two points shrinks as soon as they become connected, whether by a road, a telephone line or a bond of friendship. For all those who are not connected, there is an inverse change in geography. The more participants there are gathered together in a network, the greater the isolation and the disadvantages suffered by those who are left outside. If there were only ten fax machines in Germany, it wouldn't matter if I didn't have one. But with ten million, it is a different matter. There is an expectation that I should be connected. This explains the strong pull that networks exert. They shrink time and space. The issue divides culture-pessimists and cyber-utopians. The first are afraid that through networking they will constantly be confronted with what is foreign, strange and imponderable. The second are working on a radical redefinition of closeness that is no longer measured by physical proximity but by emotional affinity. The former suffer from anxiety overload, for the latter Marlon Brando is a fellow-citizen who lives just six friends away in Los Angeles.

AN ANSWER AT LAST

Node no. 6 still had to be found. For weeks Patrick Palmer, the missing link in the chain from falafel vendor to film star, did not return the calls. The readers were becoming as nervous as the editors. A women's magazine suggested, forget Brando, how about Brad Pitt? A whole series of new chains were proposed. One of them that would have been routed via an attorney in the film industry was tested, but it ended in a blind alley. Fortunately the six degrees of separation rule states only that any two inhabitants of the earth are no more than six acquaintances removed from one another — not how long it takes to find these six. Weeks later Palmer phoned back. Yes, he had produced "Don Juan deMarco" with Brando, they met sporadically, Brando lived not far away. OK, he would try to call him.

The connection between the Iraqi falafel vendor and the American film star was made. Nevertheless the two never met. But the world had edged a fraction closer together. //

Michael Gleich, 49, is a science journalist. His reports and analyses have won numerous awards. He is the initiator of a network for constructive journalism that focuses on the solutions to social problems and supports social change. **www.aja-online.org**

Chalking it up to technology

STUDENTS AT A HIGH SCHOOL IN HALLE ARE LEARNING WITH THE HELP OF INTERACTIVE WHITEBOARDS. BILFINGER BERGER HAS BROUGHT THE DIGITAL WORLD ONE STEP CLOSER.

THE WHITEBOARD NOT ONLY TAKES THE PLACE OF A CHALKBOARD, BUT ALSO REPLACES LAPTOPS, OVERHEAD PROJECTORS AND TVS.

ASMUS HESS / TEXT /// **KATHRIN HARMS** / PHOTOS

/// No more wiping the board, no more smelly sponges flying through the room during break times. Paul, 13, and Paula, 12, are happy about that. And for Vanessa, 12, there is one less errand to run: "We don't have to fetch chalk from the staff room any more!"

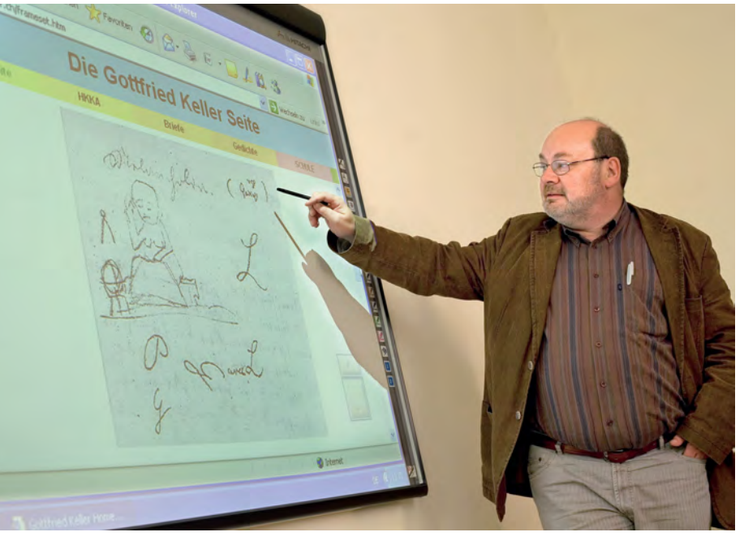
The Giebichenstein high school in Halle near Leipzig has done away with chalkboards. Instead the classrooms are now equipped with high-tech whiteboards on which students and staff can write with special pens or even with their finger tips. They can also use the boards to surf the Internet and display films, photos and charts. The boards are connected to a computer and serve as a huge interactive screen. Eighth grade students Paul, Paula and Vanessa reckon they are "really cool" — not just because they don't squeak when you write on them.

Paula remembers how last year she could only show a painstakingly prepared Powerpoint presentation on a small laptop because the beamer and the laptop were not compatible. "No one saw any of it," the disappointment is still raw. That doesn't happen any more. The whiteboards alone have taken over from laptops, beamers, overhead projectors, TVs and DVD players. With a display that measures 174 by 135 centimeters, every presentation is clearly visible, even from the back of the room.

The school has 31 of these boards: "That must make us one of the best equipped schools in Germany," says principal Thomas Gaube, 46. There are still a few glitches with the new technology: "One of our teachers recently managed to delete the entire board by mistake," Vanessa giggles. The class had a good laugh, but then it was the students who put the desperate teacher out of her misery: "One click and it was all back again!"

A TASTE OF THE FUTURE: THE NEW BOARDS FUNCTION AS AN INTERACTIVE SCREEN.

PRACTICE MAKES PERFECT: TEACHER UWE MIELKE TRIES OUT THE NEW BOARD AFTER SCHOOL.



BILFINGER BERGER OPERATES NINE SCHOOLS IN HALLE.

DETAIL IN THE STAIRWELL OF THE VENERABLE GIEBICHENSTEIN HIGH SCHOOL.

LEARNING IS EASIER IN A NICE SCHOOL: EIGHTH GRADE STUDENTS PAUL, VANESSA AND PAULA.

On the other hand, 47-year-old Uwe Mielke, the eighth grade German teacher, aims to keep a knowledge step ahead of the students, even in the digital age. After lessons he stays behind to explore what else the whiteboards are capable of. "I'm a long way from understanding all of it," he says. "The whiteboards have been very well received by our staff," principal Gaube agrees. "The teachers can save everything on the board, take it home on a USB memory stick and call it back up for their next lesson."

NO CHALK, NO WASHBASIN

Chance may have played a small part in introducing this new technology, but it was mainly the result of intelligent project planning. Last year Bilfinger Berger completely redeveloped one of the school buildings, renovated another and built a large gymnasium. The €3,000 whiteboards weren't actually included in the specification. But because the school expressed a desire to have them, Bilfinger Berger project manager Lutz Löhn sat down and reworked the figures. It occurred to him that: "If you don't want chalkboards, you don't need water pipes and washbasins in the classrooms." As a result Löhn saved enough on the modernization to convince the school authority to spend the money on whiteboards.

Over the past two years Löhn has been responsible for a total of nine modernization projects and new construction at eight sites in Halle at a cost of some €55 million. A sum that the cash-strapped city would have been hard put to find. Which is why Halle opted for a public private partnership (PPP). Bilfinger Berger has not just planned, executed and financed the works, but also remains responsible for managing and maintaining the buildings for the next 25 years. The city pays for the service in monthly installments.

AN EXAMPLE TO FOLLOW

According to Mayor Dagmar Szabados, the efficiency gain for the city amounts to 19 percent. Or, to put it another way, if the local authority had contracted the work out in the traditional way, the project would have been almost a fifth more expensive. "With the help of excellent partners in the private sector, we have succeeded in providing better learning conditions for our children," Mayor Szabados says. Both preparation and implementation were exemplary and may well "substantially influence future projects at state and federal level," the Mayor believes.

STUDENTS DESIGN THEIR SCHOOL

"It was a special project for us as well," says project manager Lutz Löhn. With five elementary schools redeveloped as part of the PPP project, Bilfinger Berger has since entered into an educational partnership and provided the schools with technology packs. With the tools, wood and other materials now available, the children can learn by experiment and discover for themselves what makes a tower stand up — or fall down. At the Giebichenstein high school, students were even allowed — under the guidance of Bilfinger Berger — to design the exterior of the new gymnasium. The graffiti-influenced facade was penned by 15 students, with the help of their art teacher. The idea was that if students were allowed to design their school for themselves, they would be less likely to damage it afterwards. Now Vanessa, Paul and Paula hope that their school will remain as nice as it is now. "We used to have scratched mirrors in the toilets and graffiti smeared everywhere," says Paul. "And there was mold growing in the corners," Vanessa adds. Not a fit state for this venerable school building with its imposing facade and broad staircases, on which the students dash up and down on their way to and from lessons in the classrooms with their "cool" whiteboards.

NO CHANGES TO THE LESSON PLANS

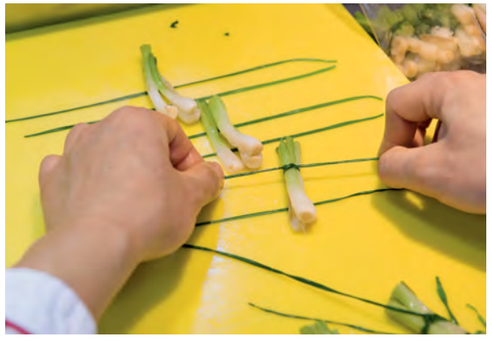
The curriculum, on the other hand, remains unchanged. Paula stands in front of the board and scrolls through her notes on the plot of Gottfried Keller's novella "Clothes make the man." Summing up the 130-year-old story in her own words is something that digital technology cannot do for her. Understanding and retelling the plot is rather more complicated than operating the board, as her teacher Uwe Mielke readily agrees. //

THE MASTER COOK FROM SHANDONG

QUIXI SHENG ARRIVED IN GERMANY THE SON OF POOR FARMERS. TODAY HE WORKS IN THE BLACK FOREST AS A COOK IN ONE OF THE WORLD'S TOP RESTAURANTS.

PHILIPP MAUSSHARDT / TEXT /// **RAINER KWIOTEK** / PHOTOS

/// If only he had been a bit taller, like his brothers. Had Quixi Sheng not stopped growing at 160 centimeters, he might have become a good factory worker or even a wheat farmer. Just like his father. "You are very short," his father told him, "too small to take on a physically demanding job." Too weak, too puny. "At most, you might be of some use in a kitchen." With that, his father sent Quixi to work in a restaurant in the neighboring city. It was almost a given that Quixi could expect a less-than-glamorous life behind the hot pots and pans, enveloped in the steam of chicken broth. However, things turned out differently. Very differently. Apart from instigating international financial crises, globalization, at times, opens up unexpected windows of opportunity for some. For instance, for a slight man from a provincial cookshop in Northeast China who suddenly found himself in Germany's Black Forest, in one of the world's best restaurants. Shandong is a coastal province located in the northeast of China, and it is one of the most fertile regions in the country. Wheat, corn, millet, potatoes and beans grow in abundance in the rich sediment of the Yellow River; the region's chicken farms supply half of China with its poultry. Moreover, the waters off the coast of Shangdong are rich in fish, crabs and seaweed. It was no accident that the emperors of the Ming Dynasty established their realm here, and that much of what people have on their plates in Beijing stems from Shandong. When Quixi Sheng talks about his childhood and about what he and his family ate in their hut, he affectionately thinks back to the steamed dumplings that his grandmother served. Peasant food actually. But, as with so much of the peasant food eaten around the world, this dish tasted particularly good because it was cooked with love. With love, wheat flour and milk. While his parents worked the fields aided by his older siblings, little Quixi, who was too small for the job, often sat with his grandmother while she held a basket over boiling water, steaming small round dumplings filled with red beans. Sundays they were also filled with meat, cabbage, dried shrimps and ginger.



SETTING SAIL FOR EUROPE!

For Quixi, the smells of his childhood more than made up for his banishment by his father to a life in the kitchen — and actually turned out to be a cloud with a silver lining. Although becoming a cook wasn't held in much regard, Quixi Sheng, having just turned 15, happily spent his time chopping Pu vegetable for simmering in a milk broth or stewing a squid until it had the right consistency. One day, however, someone said to him: "They're looking for cooks in Europe." Quixi Sheng no longer remembers where and when he heard, for the first time, that there might be an opportunity for a little cook from Shangdong Province to cook in a Chinese restaurant in Europe. He soon filled out a form and heard nothing for a long time. Until a letter arrived from Wiesbaden. The letter contained the address of a Chinese restaurant where Quixi was expected to report. A visa and flight were organized; Quixi Sheng could barely sleep out of sheer excitement. On September 2, 2002 he arrived at the Frankfurt airport on a China Air jet; the little cook

AS ENTREMETIER, QUIXI SHENG IS RESPONSIBLE FOR THE PERFECT PREPARATION AND PRESENTATION OF THE SIDE DISHES.

CHEF HARALD WOHLFAHRT (RIGHT) IS AMAZED AT QUIXI SHENG'S "ENORMOUS TALENT."

looked around, full of curiosity. So this was Germany. Although he couldn't speak a word of German, he somehow managed to get to Wiesbaden. This might have actually been the end of the story: Quixi Sheng, one of thousands of Chinese cooks who live and work in Germany and who one day return to their home country with their savings. However, Quixi fell in love with a German woman, Ulrike, who quickly recognized his unusual culinary talent — as the saying goes, food is the way to the heart. "You have to move to a fine restaurant," she said, putting in a call to the very best one in town: the Schwarzwaldstube in Hotel Traube-Tonbach in Baiersbronn. The fact that Quixi Sheng was given a chance to work as an apprentice in spring 2005 in a three-star restaurant for a six-week period was due to his girlfriend's persistence. Chef Harald Wohlfahrt, often referred to as "the best cook in Germany," a reputation supported by ten consecutive years of top ratings from the Michelin Guide, had already seen countless apprentices come and go. Quixi Sheng amazed the renowned chef. "I've rarely experienced anything like that," says Wohlfahrt. "Enormous talent paired with enormous diligence." Wohlfahrt was impressed by the devotion that his apprentice brought to every detail of what he did. Even the way he pulled the pots off the shelf looked graceful — as if a Tai Chi master, and not an ordinary cook's assistant, were working there. A short time later, Quixi started as a regular cook on Wohlfahrt's team.

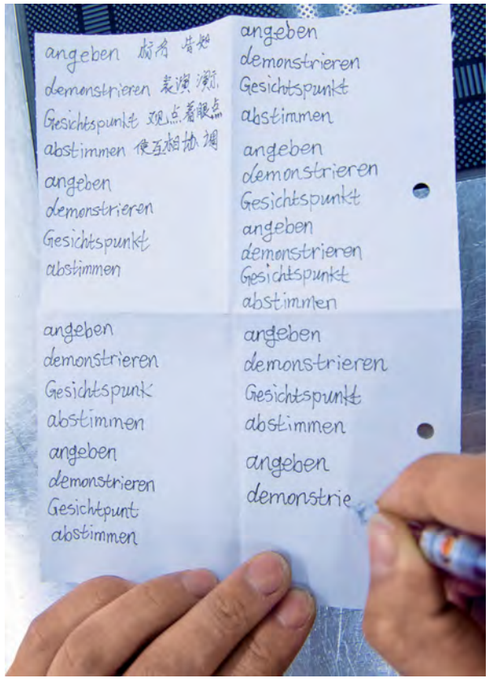
14 HOURS OF INTENSE ACTIVITY

There are only a few more stressful professions than being a cook in a starred restaurant. The job gets underway at nine in the morning and often ends — with only one short break in the afternoon — at around eleven at night. During that time, intense concentrated activity reigns — at hellish temperatures. Quixi Sheng is one of ten cooks and, as entremetier, is responsible for the preparation of the side dishes. With a scalpel the cook carves small carrots into little artworks, then goes on to creating potato rosettes for a gratin while gathering together the ingredients for the creamed gnocchi. "It's completely different here than in a Chinese restaurant," he says, in almost perfect German. "It takes many years to learn all of this." In the beginning, the totally different dining culture confounded him: "In China, people tend to eat very quickly. Each dish is rather small and they are all served at the same time. The table is crowded and guests help themselves to the food any

THE QUIET IN THE BLACK FOREST IS STILL A BIT STRANGE: QUIXI SHENG ON HIS WAY TO HIS LODGING ON A WINTER'S DAY.

which way." Not so with French-inspired cuisine, with its complex main courses and its drawn-out timeframe, punctuated with many breaks. The silence that settles over everything in most gourmet temples is rather disconcerting for the Chinese.

Quixi Sheng's life consists of three different tasks: cooking, sleeping and, if there's a bit of spare time, adding to his German vocabulary. Four words a day is what his girlfriend Ulrike has assigned him, regularly writing the words neatly in Quixi's little notebook. Today, the words are: angeben — boasting, abstimmen — agreeing, Gesichtspunkt — viewpoint and demonstrieren — demonstrating. Why these four? Sheng has no idea, but transcribes them in Chinese letters and then attempts to understand their meaning. Suddenly, the chef's voice calls out: "Table four, red, two number ones, one number two, the fish without shellfish." All of the cooks know exactly what he means and answer like soldiers to a general: "Oui, Chef!", then breaking ranks into full activity. With lightening speed Quixi has tossed aside his dictionary and prepares for action. Sheng dreams of one day perhaps creating a new, unique cuisine that would unite the culinary secrets he learned in his home country with those that he's becoming acquainted with in



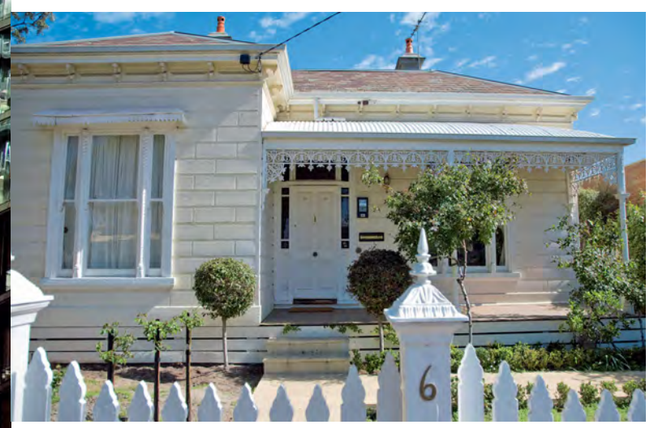
COOKING, LEARNING GERMAN AND SOME TAI CHI: "IF YOU INTEND TO RENEW YOURSELF, DO IT EVERY DAY," SAYS CONFUCIUS.

the Black Forest. It would be a form of cooking that is both fast and slow, and that allows each product to reveal its own distinctiveness, as in French cooking, and yet, as in China, changes with the addition of each ingredient. It would be a way of cooking that exists nowhere as yet. "But I need a bit more time for this," says Sheng, "because I first have to discover everything that one can possibly discover." A few years ago, he expressed it in this way: "Those who want to be top must first learn top." //

SMART METERS

AUSTRALIA'S PER CAPITA CO_2 EMISSIONS ARE THE WORLD'S HIGHEST. SMART METERS WILL SOON RAISE CONSUMERS' ENERGY AWARENESS.

JULIA JUNGEHÜLSING / TEXT /// **TOBIAS TITZ** / PHOTOS



PRIVATE HOUSEHOLDS CAN ALSO SAVE ENERGY THANKS TO THE LITTLE BOXES INSTALLED BY MEN LIKE JIM KAFRITSIS.

OFFICE BLOCK IN CENTRAL MELBOURNE: INTELLIGENT METERS ARE HELPING CUT COSTS.

/// The electricity cables are draped above the street like giant strands of licorice. At each intersection the black cables are wrapped around ceramic insulators mounted on poles, before disappearing left and right among the roofs and chimneys. The way electricity is distributed in the Melbourne suburb of Hawthorn is typical for Australia: running the cables underground is not standard practice in many residential areas. Yet despite the old-fashioned appearance, the future has arrived: Jim Kafritsis from Bilfinger Berger Services is fixing a small box to the white-painted boarding on the front of one of the houses. The new electricity meter, half the size of a shoebox, can do more than just count kilowatt hours: This "smart meter" is designed to help save energy, cut costs and protect the environment. It might even make the construction of a few new power plants unnecessary. The government of Victoria also hopes that the meters will encourage consumers to become more environmentally responsible.

The installation of 2.5 million new meters began in September 2009, following a 2007 government decision that businesses and private households in the Australian state of Victoria should have their old meters replaced. At a cost of 2.5 billion Australian dollars (€1.4 billion), this is the largest single upgrade project to date in Victoria's electricity infrastructure. Distributors CitiPower and Powercor Australia supply electricity to one million customers in Victoria, half of whom are having their new smart meters installed by Bilfinger Berger Services. "We have worked with Bilfinger Berger on a number of projects and this continues our relationship into a different and exciting area," says Frank Salvatore, Metering Services Manager at Powercor. Bilfinger Berger has been active in Australia's energy sector for 60 years. The changeover to smart meters in Victoria is scheduled to take four years. It's a process that, from Bilfinger Berger Services' perspective, requires not only logistics expertise, but also a great deal of care and tact when dealing with the customers.

"It's not just about interrupting customers' power supply. Changing the meter can reveal out of date house wiring in some cases," explains Simon Pasinati who oversees the technical side of the project at Bilfinger Berger. Old fabric-insulated wiring can be unsafe and may have to be replaced — a problem that could affect a small proportion of houses, but which will come without warning and require immediate action and unforeseen expense. "Sooner or later, customers would have had to foot the bill for wiring upgrades anyway, but these costs may inadvertently be blamed on the meters," says Pasinati.

The hardware at the Powercor Australia network control center is already state-of-the-art. Metering Services Manager Frank Salvatore points to the bank of LCD screens that collate the mass of customer data and consumption curves, and displays information on impending storms that could interrupt power supplies. "When the roll out is complete, our network and customer management systems will be automatically receiving and processing 4,000 percent more meter data than at present. We estimate we will be receiving 48 million meter readings per day," says Frank Salvatore. "That's a heck of a lot of data to process, evaluate, and pass on to the appropriate electricity retailer."

DEREGULATED ENERGY MARKET

These smart meters are hard workers. The meter reader used to come four times a year to record each customer's consumption. The new electronic meters transmit consumption data every 30 minutes. The meters also offer other benefits. They can be remotely turned on or off, when a customer moves in or out for example. And in future the meters will also be able to report a power outage immediately, allowing Powercor to respond almost at once. The meters are also harder to manipulate than the old ones and make it difficult to steal electricity — by tapping into the neighbor's supply cable, for example. Almost as importantly, the government sees the meters as a way to empower consumers to manage their energy consumption.

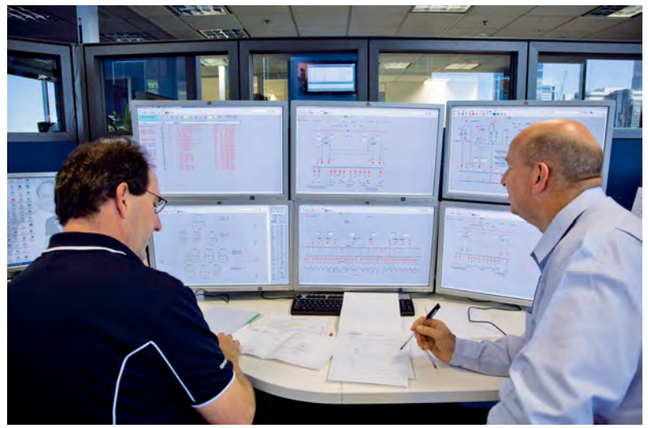
"Australia's energy market is one of the most deregulated in the world," says Tim MacTaggart, operations manager of Bilfinger Berger Services in Melbourne. The producers, in Australia mainly coal-fired power stations, feed electricity into a pool and energy suppliers and traders bid for it, rather like a commodity exchange. Prices are therefore strongly dependent on supply and demand. On hot summer days when every air conditioning system is working overtime, buyers on the National Electricity Market (NEM) have to pay more for power than on a mild autumn night. Most suppliers currently charge their customers an average rate that takes account of both the high purchase prices in peak periods, as well as bargain buys at times when more energy is available.

COUNT MORE, PAY LESS

In future, tariffs will be able to take the precise time of consumption into account, to the benefit of price-conscious consumers. Electricity retailers are expected to offer monitors to accompany the smart meters which will show the customer exactly how much electricity is being used at any time and how much it is costing to watch the rugby match and do the washing, for instance. The Victorian government expects this will provide an incentive for many people to monitor, optimize and reduce their home electricity consumption.

The government hopes that in future every individual will be encouraged to switch on domestic appliances at times when demand is lower and power is cheaper. With demand in better balance, this could even make the construction of new power stations unnecessary.

"It may take a while before the benefits are felt," observes Tim MacTaggart of Bilfinger Berger Services. "But in any event, it is a good thing for customers to be integrated into the generation of energy and the costs involved." Thanks to Australia's rich supplies of coal, electricity prices are low by global standards. According to a recent study, Australia has overtaken the USA as the leader in per capita CO_2 emissions, with every Australian producing 20.6 ton of carbon dioxide per year, twice as much as their German counterparts. "Smart meters can help raise our awareness of how we use our resources here in Australia — and help us to manage our response," Tim MacTaggart believes. //



THE OLD METERS WERE READ FOUR TIMES A YEAR. THE NEW ONES TRANSMIT CONSUMPTION DATA EVERY 30 MINUTES TO THE ENERGY SUPPLIER'S CONTROL CENTER.

NEW METERS IN AN APARTMENT BLOCK: EACH HOUSEHOLD CAN OPTIMIZE ITS ENERGY CONSUMPTION AND ITS COSTS.

FRANK SALVATORE AT THE POWERCOR CONTROL CENTER: "THERE WILL BE A HECK OF A LOT OF DATA TO PROCESS."

HOT ON THE TRAIL OF LIFE

JAN SCHMORANZER USES MODERN MICROSCOPES TO GET A CLOSER LOOK AT THE BUILDING BLOCKS OF HUMAN CELLS AND HELP TO DEVELOP NEW DIAGNOSIS TECHNIQUES.

JAN RÜBEL / TEXT ///
PAUL HAHN, JAN SCHMORANZER / PHOTOS

/// In a laboratory at Berlin's Charité university hospital, Jan Schmoranzer, 39, takes a plastic slipcase with 96 compartments out of a cabinet: "There are cancer cells in here," he says, placing the slipcase in a black container under the lens of his microscope. It's the BD Pathway 855 optical microscope, one of the most modern devices on the market and one that has little in common with the tabletop microscopes we remember from our schooldays. At the push of a button a little robotic arm swings past the lens, grasps the cell-filled container and aligns it. Next to it on the right, a big computer screen takes pride of place, displaying the close-up images of the cell culture.

"The cells come from a woman who died of cervical cancer in Baltimore in 1951," says the scientist. They established a cell line that was cultured and passed from lab to lab around the globe — and still is. Scientists have been using it for a wide range of experiments for decades — including those at Charité Berlin, one of Europe's biggest university hospitals, where Schmoranzer, a physicist, works as head of the Microscopy Department.

Schmoranzer is an expert in the microscopy of cell samples and, as such, is one of a handful of young scientists who are in demand the world over. That's because modern medicine now relies more and more on imaging techniques in the course of its research. Such techniques enable scientists to look right into the heart of cells. This close-up view delivers valuable knowledge about the chemistry of the cells: A better understanding of the metabolic processes in the cells will ideally give scientists knowledge of what's going wrong in the body when disease strikes, thus enabling them to develop targeted medication.

However, by no means can everyone operate these modern microscopes. They are too complex in the way they work, too varied in their range of applications. And so a new profession has grown up in recent years, one which is now in urgent demand in the labs of the world: the bioimaging expert. "Many institutes or large laboratories are currently in the process of establishing their own departments with experts like me," says Schmoranzer. Charité Berlin enticed Schmoranzer away from New York, where he had spent 13 years working for Rockefeller and Columbia Universities.

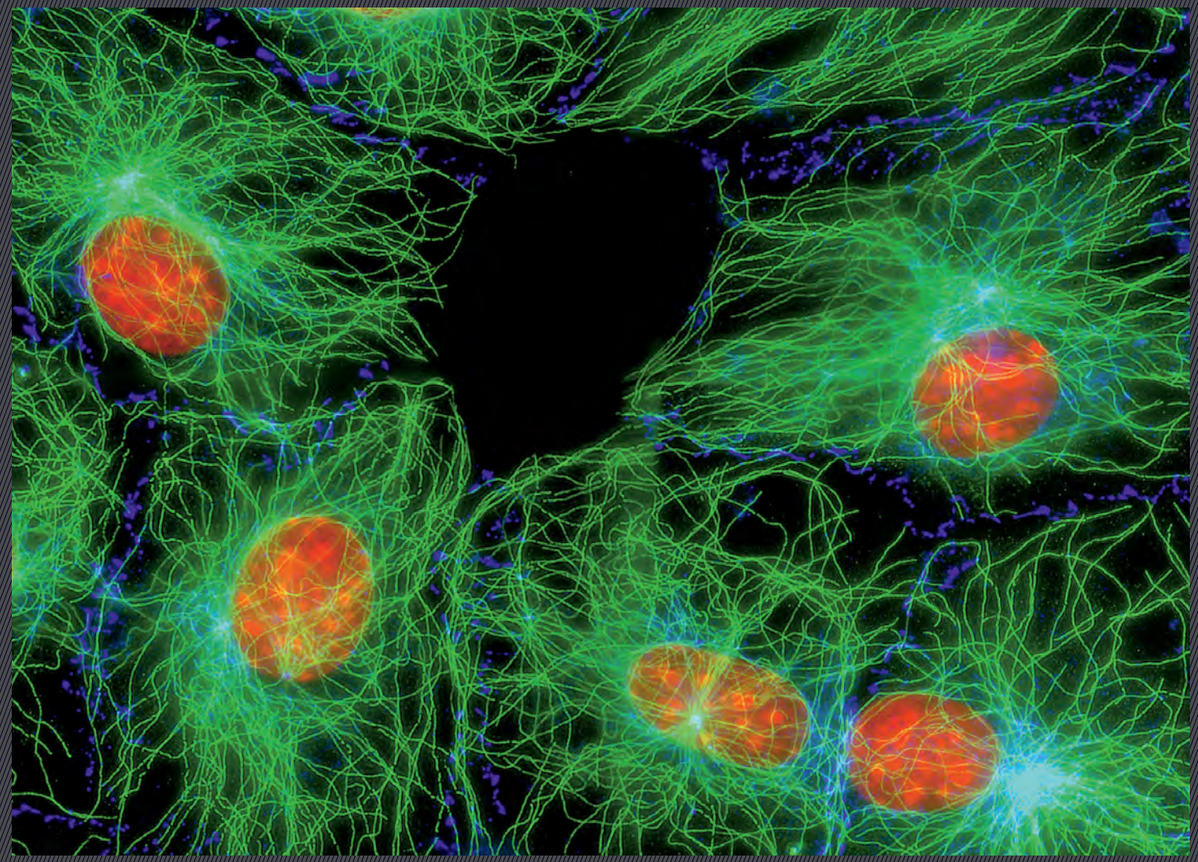
He moves the BD Pathway 855 optical microscope a little to the right with the joystick. The images are sent from the lens to a digital camera, and from there they are transmitted to the computer screen. This microscope, which sells for 350,000 euros, allows the scientist to get right up close to the cells, as close as 200 nanometers, visualizing the smallest components of the cells with a staggering degree of magnification. It's a real microcosm that Schmoranzer is working on. By way of comparison, the diameter of a human hair, at 7,500 nanometers, is 350 times larger than many of the cell components Schmoranzer is visualizing.

Suddenly the screen is filled with white dots in a gray, shapeless form. "We're in the cell nucleus," explains Schmoranzer. "The gray haze around the dots is the rest of the cell space." If a cell contains white dots, it's diseased; healthy cells have fuzzy gray dots. Why, no one knows — yet. But even the first vague findings provide a measure of help.

THE FIGHT AGAINST LEUKEMIA

Schmoranzer and his fellow scientists at Charité are hot on the trail of leukemia. And the Pathway is going to help them by using clever technology to conduct mass experiments: thousands of diseased white blood cells will be mixed with various chemicals and put under the microscope. The computer will then automatically distinguish healthy blood cells from diseased ones, thereby simplifying the painstaking process of drug discovery. "We want to find a solution that either genetically modifies diseased cells and reprograms them into healthy ones, or kills them off," says the physicist. He is currently writing a piece of software to handle the automatic image recognition — and practicing on the cancer cells from Baltimore.

Now Schmoranzer wants to get even closer. He unscrews the lens offering 20 times magnification and replaces it with one that magnifies images 40 times. The digital camera does the rest. "It's only a 1.4-megapixel camera, but its pixels are a lot smaller and more sensitive to light than



Cell chatter: Like tiny blue sparks, the proteins that serve as the means of communication between two cells light up in this image. They are located on the outer membrane of the embryonic mouse cells, visualized here at 600 times magnification. Thanks to the fluorescence technique, the cell nuclei, too, are visible as red circles. From here, microtubules — tube-shaped structures just 25 nanometers in diameter — branch out like flashes of green lightning. They form a kind of skeleton for the cells.

SMALL, SMALLER, SMALLEST /// Red blood cells: 7.5 micrometers in size, 133 of them can fit in one square millimeter / Viruses: up to 100 nanometers (0.0001 mm) in size, a chain of 10,000 viruses would be one millimeter long / Proteins: ten times smaller than viruses / Atoms: 0.1 nanometers in size, one hundred times smaller than proteins //

those of conventional cameras," says Schmoranzer. It therefore makes even the smallest of structures visible.

Yet even that doesn't quite do the trick. At this resolution, the cells appear so endlessly big that you need to locate to the precise segment you want to look at. Schmoranzer employs a complex technique to find it: the Pathway is what's known as a fluorescence microscope. With the help of molecular-biological methods it can make precise sections of the cell light up.

In the case of the cancer cells under his Pathway, Schmoranzer is trying to find his way to a protein in the cell nucleus. In a bid to make it visible, the scientist delves into the animal world's bag of tricks — the secrets of a jellyfish, to be more precise. Jellyfish have a special protein that glows green at a certain incidence of light. Special enzymes can be used to combine the DNA strings of both molecules — thereby making the cell produce a double protein instead of its normal protein; the double protein turns green when exposed to a beam of light. This is where Schmoranzer's own special brand of expertise comes into play: Using the microscope's many different filters and light sources he figures out a clever way of lighting the sample so that the protein is illuminated at just the right angle and just the right wavelength. It's only through his work that the protein starts to fluoresce — and becomes visible to the observer.

THE BEAUTY OF THE CELLS

He's in a hurry because it's his final week working here — he's about to move to the Free University of Berlin (FU Berlin). There he will build a microscope capable of getting to within 20 nanometers of the cell samples, in other words ten times more powerful than the microscope at Charité. There are very few microscopes of such high resolution around. Most of them are in the US, which is where Schmoranzer himself first came into contact with them: on an internship at New York's Rockefeller University, which he embarked upon after completing his physics degree at Aachen. Looking through the eyepiece for the very first time, he knew that was it for him: "Each cell is as individual as a person," he raves. "In New York I saw the beauty of their arrangement, I got a sense of the extent of their impact on life." The young German's enthusiasm won the professors over. They invited him to pursue his Ph.D. with them. His subject was the high-resolution imaging of protein transportation through the outer skin of the living cell.

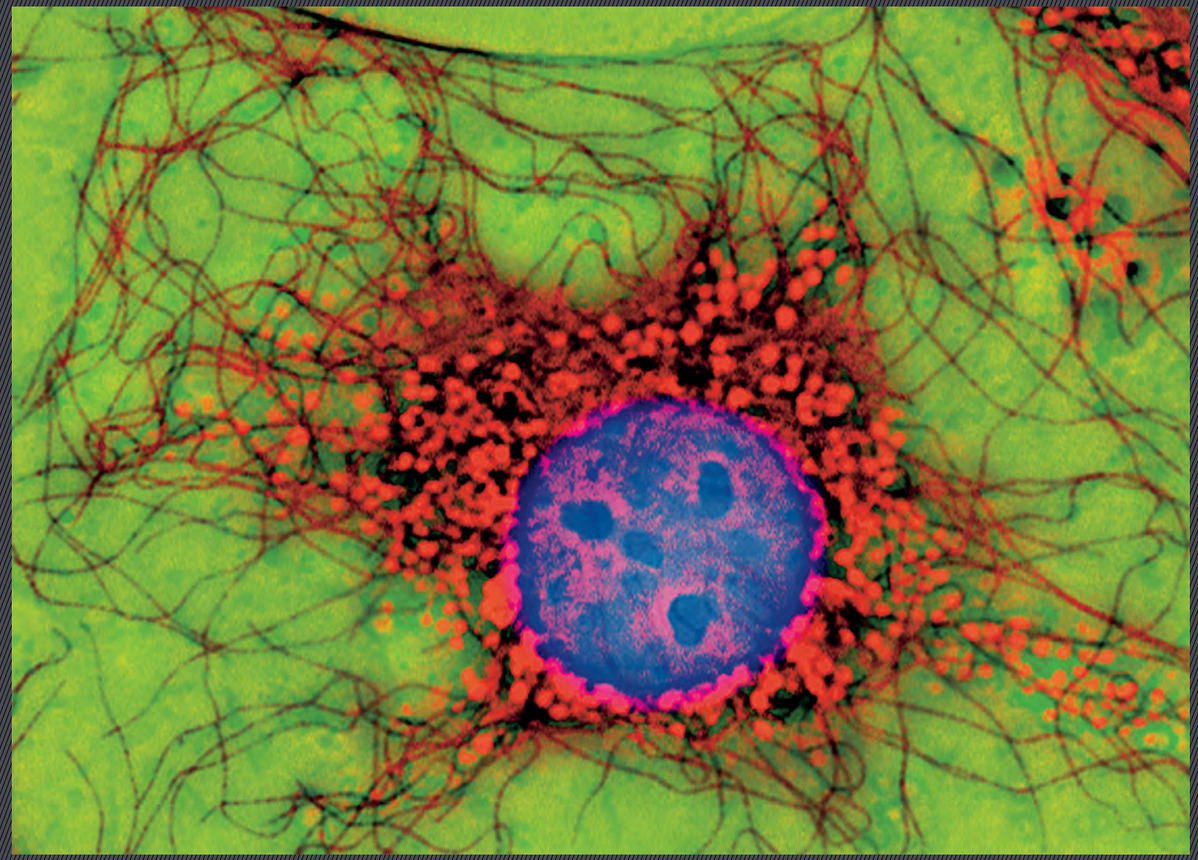
This specialization was quite an obvious choice for Schmoranzer, being a keen photographer. His father gave him his first single-lens reflex camera at 15, after which he spent countless evenings on the balcony trying to capture the perfect sunset. Later, Schmoranzer even had his own photography exhibitions. He has already won prizes for his fascinating cell photographs.

SECRETS OF THE CELL WALL

His new job at FU Berlin may well bring him other prize-worthy photos. "I want to get even closer to the cell surface at FU Berlin," says Schmoranzer as he pulls off his disposable gloves. Unlike his job at Charité, Schmoranzer will not be writing computer programs here. He will be helping to visualize cell mechanisms that are, as yet, virtually unknown. The spatial distribution and interaction of the molecules in the outer membrane are what he plans to study in more detail. By this he means the chemical compounds that act like switches to start or stop the cells' actions at the outer cell walls. Here too, Schmoranzer will experiment with mirrors, lenses and fiber optic cables until he finds just the right settings to make the structures on the membrane visible. If he succeeds, scientists could discover how commands are issued and followed at the outer cell wall. This could ultimately give man the power of control over cells.

But for now Schmoranzer flicks the switch on the computer. That's enough for today. The cells, flickering as big as a hand on the screen until barely a moment ago, vanish into nothingness. Suddenly the closeness appears remote indeed. //

JAN SCHMORANZER IS A BIOIMAGING EXPERT, A NEW PROFESSION THAT IS IN GREAT DEMAND IN THE LABORATORIES OF THE WORLD.



Guten Appetit: At the heart of the cell, the (violet-tinted) cell nucleus — the home of the genome — sits enthroned. It is encircled by little dots, the lysosomes (shown here in red). These are tiny encapsulations that contain enzymes the cell uses to digest extrinsic and intrinsic proteins. Thus dismantled, the components can be reused — according to a design plan stored in the genome.

ENERGY EFFICIENT CONSTRUCTION

DÜSSELDORF CORRECTIONAL FACILITY

Bilfinger Berger is building the new Düsseldorf correctional facility for the state of North Rhine-Westphalia. The order is valued at €120 million. The facility will accommodate 850 inmates and is expected to be operational by autumn 2011. An energy supply concept devised by Bilfinger Berger is due to deliver energy and maintenance cost savings of around 20 percent.

EDUCATION

AUSTRALIA INVESTS IN SCHOOLS

Bilfinger Berger is profiting from Australia's infrastructure programs. In the Sydney area the Group will be thoroughly modernizing 177 schools. The order worth €120 million will be completed by mid 2011.

Meanwhile in Melbourne, Bilfinger Berger is building eleven new schools. This €110 million project is based on the standards laid down by the Australian "Green Star" seal of quality awarded to exceptionally environmentally friendly buildings. Bilfinger Berger is also building and extending university buildings, student accommodations and research facilities in Canberra, Wollongong and Sydney. Collectively, these projects amount to more than €140 million.

INFRASTRUCTURE

MOTORWAY PROJECT NEAR BRISBANE

Bilfinger Berger Australia has been commissioned to expand an eight-kilometer stretch of the Ipswich Motorway south west of Brisbane from four lanes to six. The project also includes the construction of 31 new bridges and has a volume of €800 million, with Bilfinger Berger's share amounting to €510 million. Completion is scheduled for 2013. The Ipswich Motorway is being developed on the basis of an alliance model, a form of contract placement increasingly favored for major public construction projects in Australia. A balanced risk structure is what sets this partnership-oriented approach apart.

NEW HIGH-SPEED LINE

TUNNELS FOR THURINGIA

To serve the new 100 kilometer high-speed line being built between Ebensfeld and Erfurt, Bilfinger Berger is building three tunnels with a total length of around 10 kilometers.

Total volume for the project amounts to €290 million, of which 40 percent is accounted for by Bilfinger Berger. The key feature of the route is the 7.5 kilometer Silberberg tunnel. Bilfinger Berger will also construct the shorter Brandkopf and Lohmeberg tunnels. The twin-track tubes will be excavated primarily through the drill and blast method. The high-speed rail route is part of the German Unity No. 8 transport project due to enter service somewhere between 2015 and 2017.

GOLDEN EARS CROSSING

PPP HIGHWAY ENTERS SERVICE IN VANCOUVER

The Golden Ears Crossing in Vancouver, Canada has entered service, providing a high-speed link across the Fraser River. The key feature of the project is a 1,000-meter bridge served by three kilometers of highway and nine kilometers of connector roads. Bilfinger Berger designed, financed and built the route and will operate it for a 32-year period. During this time the company will receive a fixed usage fee from the transport authority. The investment volume amounted to €800 million.

HAIDACH NATURAL GAS STORAGE FACILITY IN AUSTRIA. MCE CONTRIBUTED A SUBSTANTIAL PORTION OF THE PLANT TECHNOLOGY.

MAJOR ACQUISITION STRENGTHENS SERVICES BUSINESS

TAKEOVER OF INDUSTRIAL AND POWER SERVICES PROVIDER MCE

Bilfinger Berger has acquired the industrial and power services provider MCE headquartered in Linz, Austria. This major acquisition is a big step forward in the development of the Group's services business. MCE employs more than 6,500 people and generated an output volume of around €900 million in financial year 2008. The purchase price of €350 million was financed primarily through a capital increase.

MCE specializes in the design, construction and maintenance of facilities in the process industry and the energy sector. Its broad range of services includes piping, mechanical components as well as measurement and control systems. MCE undertakes the management of maintenance activities for entire industrial sites, also on an outsourcing basis. MCE's activities are centered in Austria and Germany. The company maintains long-term relationships with key industrial companies and energy suppliers.

CONSTRUCTION AND PIPING

MANNHEIM POWER STATION

Bilfinger Berger is to carry out structural works for the new block at the Mannheim power station. The order has a total volume of €120 million, of which Bilfinger Berger will account for 30 percent. In 2008, Bilfinger Berger received the order to manufacture and assemble the high-pressure piping systems for the new block.

INDUSTRIAL SERVICES

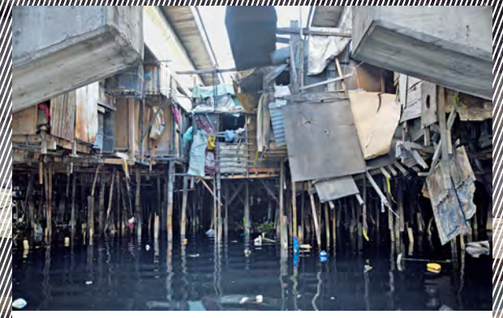
BILFINGER BERGER BUYS LTM

Bilfinger Berger has acquired 80 percent of the shares of French industrial services provider LTM. The Lyon-based company is focused on the pharmaceutical, chemical and petrochemical industries as well as energy management. Its services include piping and tank construction, measurement and control systems and the production and assembly of plant components on a turnkey basis.

STOCKHOLM RAILWAY TUNNEL

IMPROVED CONNECTIONS

Bilfinger Berger has won an order to build a 1.9-kilometer long section of the city rail tunnel in the Swedish capital of Stockholm, improving the connection from the city's main station to the national railway network. The order has a volume of €100 million. The tunnel section will be completed by 2015 and the entire line will go into service in 2017.



AN ILLEGAL SETTLEMENT MADE OF BAMBOO, CARDBOARD AND PLYWOOD IN THE PHILIPPINE CAPITAL.

THE ROAD ABOVE SERVES AS A ROOF. A VENTILATOR STIRS THE FETID AIR.

THE BAT PEOPLE

Around 300 families live beneath the bridge where Circumferential Road 3 crosses the Navotas river in Manila. They shelter in makeshift huts made of tin, cardboard and plywood, above, below and beside one another, crammed between the bridge and the water. Supported by bamboo poles, old ropes and planks wedged in the structure of the bridge, the inhabitants live like bats hanging from the roof of a cave. And that is what they are called: the bat people.

Once they labored on the land, dreaming of a better life in this city of 12 million. Now they wash trucks, haul fish in the market, collect garbage. Their wages are barely enough for food, a scrap of soap, water to drink. Few make it out of here. All told, there are believed to be 150,000 families living in a similar manner beneath the many canal and river bridges of the Philippine capital. Carlos, who lives with his wife and family under the Navotas bridge, finds comfort in grim humor: "Our bridge cost millions of dollars. We live beneath the most expensive roof in the world."

NAVOTAS, MANILA

CIRCUMFERENTIAL ROAD 3

CARSTEN STORMER / TEXT /// PHOTOS

A YOUNG BOY FLOATS ACROSS THE RIVER ON A STYROFOAM RAFT: IT'S THE ONLY WAY TO REACH HIS FAMILY'S HOME.

The Multi Service Group. BILFINGER BERGER