BRIDGE TO A CAREER

NOT FAR FROM VANCOUVER, YOUNG GRADUATES ARE WORKING ON THE ULTIMATE IN CIVIL ENGINEERING PROJECTS: THE CONSTRUCTION OF A HUGE CABLE-STAYED BRIDGE

EVA WOLFANGEL / TEXT /// **CHRISTOPH PÜSCHNER** / PHOTOS

WHEN IT OPENS IN 2009 THE GOLDEN EARS BRIDGE OVER THE FRASER RIVER WILL SAVE COMMUTERS A 30 KILOMETER DETOUR

/// The wind whistles round their hard hats, rain drips from their safety glasses, and their neon yellow vests are soaked. Standing on one of the bridge pylons 40 meter above the river, staring into the formwork, Matthias Götz, 28, and Martin Schweizok, 30, appear not to notice the wet. "According to the plan, there's got to be 40 mm steel bars in there. But that's going to make it tight when we pour the concrete!" says Schweizok.

Just one of many problems that Schweizok and Götz have had to deal with in Canada. The two young engineers are working on a major project near Vancouver: when the six-lane Golden Ears Bridge is finished in April 2009 it will stretch for a thousand meters across the Fraser River. "I had to wait years before I was allowed to build my first cable-stayed bridge," remarks Construction Manager Dirk Deigmöller, 37, one of the three-man team in charge of the site. "These guys get to do the job straight out of college." Giving young people opportunities like this is an investment in the future, says Project Director Michael Heerdt, 40: "Our company needs young people. They have to work hard here, but we give them plenty of support and we're happy to pass on our experience." And also Commercial Manager Stefan Herschler, 36, is enthusiastic about the young engineers: "They're soaking up the knowledge and experience like a sponge," he adds with satisfaction.

THE JOY OF CONSTRUCTION

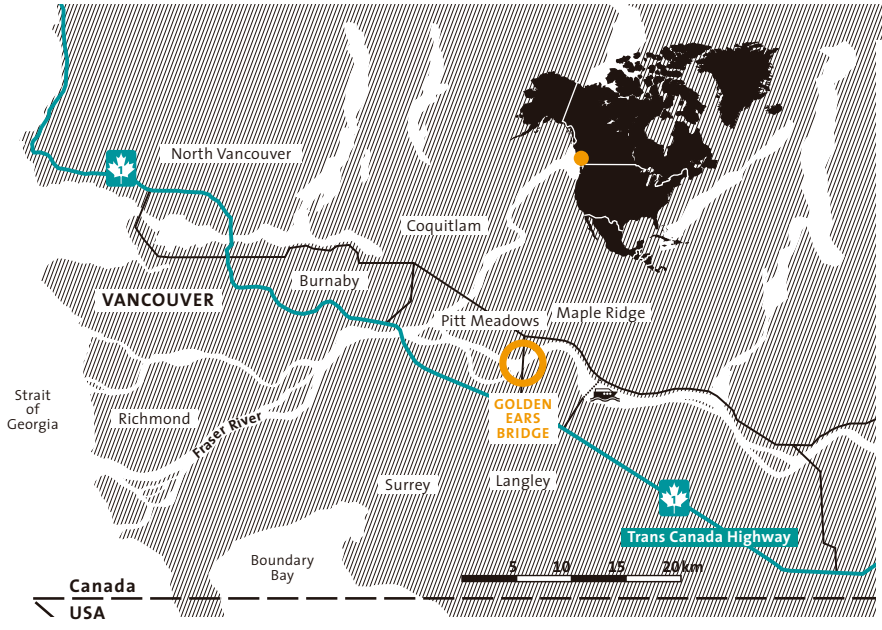
For graduate Martin Schweizok, the Golden Ears Bridge is the high point thus far in an already varied career: after training as an optician, he went to Israel to do community service. There he helped to put up a youth club and discovered how enjoyable building can be. "International Civil Engineering" sounded just right, and he studied in Mainz and South Africa before arriving in Vancouver with his degree in his pocket, for six months' work experience on the Golden Ears Bridge. After that, Bilfinger Berger offered him a permanent job. For a year now he has been working as a field engineer, spending more time on site than in the office. Up to twelve hours a day, six days a week. When his daughter Paula was born back home in Germany in February, he took just two weeks leave. "That's all the time there was," he shrugs. Each day he eagerly awaits his wife's e-mails with the latest photos of their little girl. Of course he would like to see more of his family. "But a big project like this is a unique opportunity. It's not like building houses in the suburbs."

420 STEPS TO WORK

At the foot of the southernmost pylon, Schweizok leaps aboard a boat that shuttles between the four pylon work sites. The Fraser River here flows westwards; the bridge construction is progressing from south to north. While the road deck is already being laid at the most southerly pier, the northernmost pylon is only half finished. Bilfinger Berger is also building the bridge's access roads. The six-lane southern approach already winds its way to the river like a huge gray snake. As if waiting patiently for the bridge to be completed, it ends high in the air just short of the flowing water.

MATTHIAS GÖTZ, 28: "BRIDGES ARE SPECIAL BECAUSE THEY BRING PEOPLE TOGETHER."

A FLYING VISIT: 80 METERS UP IN THE AIR, MARTIN SCHWEIZOK (RIGHT) CHECKS ON THE PROGRESS OF THE REINFORCEMENT



ONE OF CANADA'S BIGGEST PPP PROJECTS

GOLDEN EARS BRIDGE

The Golden Ears Bridge over the Fraser River will connect the eastern suburbs of Vancouver. In the past, commuters either had to make a 30 kilometer detour or cross the river by ferry. The new link will take the pressure off the heavily used bridge closer to the city and reduce travel times substantially. The Golden Ears Crossing is one of the biggest public private partnership projects in Canada. Bilfinger Berger is designing, financing and building the 1,000-meter long bridge together with 12 kilometers of access roads. From 2009 onwards the company will then operate the new link for a period of 32 years in return for a fixed fee. The total investment amounts to g 600 million.

THE YOUNG ENGINEERS ARE RARELY IN THE OFFICE. MARTIN SCHWEIZOK VISITS EACH OF THE PYLON WORK SITES BY WATER TAXI

WORK ON THE FEEDER ROADS ON THE NORTH SIDE OF THE BRIDGE IS COORDINATED BY MARIO VIDUKA (BOTTOM, CENTER)

FROM UNIVERSITY TO BUILDING SITE

Bilfinger Berger offers committed students and graduates in engineering and economics a chance at undergraduate posts and internships in Germany and abroad. The Group has close contacts with many universities, including Aachen, Dresden, Kaiserslautern, Darmstadt, Karlsruhe, Mannheim, Munich and St. Gallen. Civil engineers are currently in particular demand, along with mechanical and process engineers as well as management graduates. The company looks for team players with considerable flexibility and a willingness to work outside of Germany.

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The boat drops Schweizok off at the next pylon where he climbs 420 steps to check on the reinforcement. Some 90 meters above the river he meets specialist Marcel Lutin, 47, a Frenchman with a weather-beaten face. Schweizok explains the problem with the tight formwork and the forty millimeter bars: "Can't we use twenty millimeter steel instead?" Lutin nods, "Yes, that'll work." Then he grins. He is happy when the youngsters ask his advice.

YOUNG PUPS AND OLD DOGS

Giving instructions and checking on men old enough to be his father was something Ryan Coppola did not at first find easy. The 25-year-old Australian left university just a few weeks ago. Now he is standing not far from the bank in a container-sized form in which one of the bridge girders is to be concreted in place. The form is filled with a dense web of steel bars and hoops of varying diameters, crisscrossing one another at different levels. Ryan Coppola checks the spacings between the steel bars with a rule and compares the results with his drawing. It is cramped and noisy in here with workmen heaving and dragging the bars until they are in the right place, then lashing them with wire.

IN A WEB OF STEEL: RYAN COPPOLA (LEFT) GRADUATED JUST A FEW WEEKS AGO. NOW HIS JOB IS TO ENSURE THAT THE BRIDGE GIRDERS ARE TOP QUALITY

"Hey, you'll have to refit this one," Coppola tells one of the men, who is visibly annoyed. It's late in the day, time to knock off, what does this young pup want now? It's clearly written in the man's face. But Coppola stands firm. The concrete is due to be poured in the evening and these girders must withstand some exceptional loads. "The bars are not the right distance apart, it won't do," says Coppola with finality.

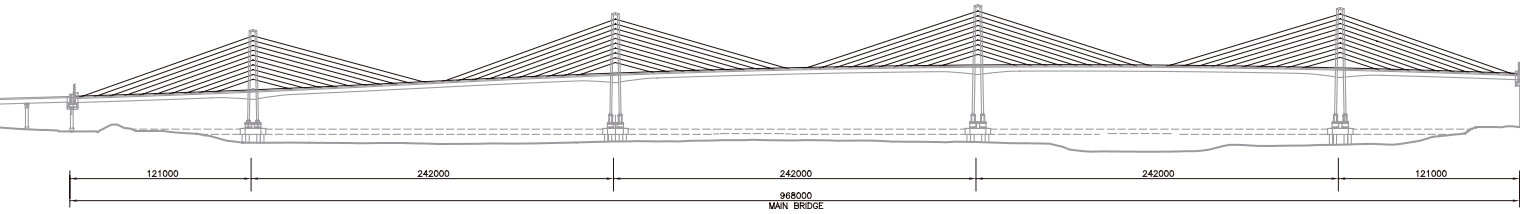
THE ELITE OF CONSTRUCTION ENGINEERS

How to deal with workers from Poland, Panama or Thailand is not something they teach at university. Nor is the fact that in the cramped confines of a reinforcing cage, with time pressing, tensions can run high. Coppola has learned from the foremen and from his bosses how to deal with the men. When one of them once refused to accept that his work needed rectifying, Coppola took him to the side and spoke to him man to man. "We agreed the criticism was not meant to be taken personally, and shook hands on it. After that things were better between us."

Matthias Götz, 28, is responsible for organizing the reinforcing steel for the entire site. On his web site under hobbies he lists "Skiing, skiing, more skiing." Nowadays he gets no more than a distant glimpse of the snow-capped mountains visible in clear weather on the horizon behind the bridge pylons. Instead he sits, sometimes till late into the night, in a office container between mountains of files and charts dotted with brightly colored to-do lists. What for? "We are building for the future. The bridge will outlast us," explains Matthias Götz, but personal pride surely also has a part to play. "Bridges like this attract the elite of construction engineers, and those of us just starting our careers are really lucky to be involved."

15 STUDENTS AND UNIVERSITY GRADUATES

There are currently 15 students and university graduates on six-month work placements on the site, and some gladly stay a little longer. Five of last year's batch were taken on as field engineers, among them Matthias Götz and Martin Schweizok. Together with two other young engineers they have rented a house. So when after a long day they meet up in the kitchen, they keep on talking shop. Götz's room contains nothing but a bed, a desk, a TV and a suitcase in the corner. There are no pictures on the walls, not



THE GOLDEN EARS BRIDGE STRETCHES FOR A THOUSAND METERS ACROSS THE FRASER RIVER

here nor anywhere in the house. And the fridge is not exactly well stocked: "No time for shopping," says Matthias Götz with a laugh.

Mario Viduka, 33, talks to Matthias Götz and Martin Schweizok almost exclusively by phone, since he works on the north side of the Fraser River. Viduka oversees the road building and groundworks. Eight kilometers of new roads are in his charge. As the engineer responsible for an entire section, he is often under siege from all sides. The mayor wants his road mended, the water authority doesn't want its pipes to be touched, the environmental department is worried about the fish in the diverted stream, and local residents want their access kept clear. Viduka has to have tact, sensitivity and strong nerves. "Sometimes you feel like a referee in the middle."

THE GROUND IS SOFT AS TOOTHPASTE

Large construction sites have fascinated him ever since he was a small boy at home in Karlsruhe where he watched his father — a construction worker — at work. After graduating from high school he worked in construction to earn money for university. Now Mario Viduka employs the same determination to build the access road to the Golden Ears Bridge. The engineers joke that the ground is like toothpaste, a mix of sand and clay with a high moisture content. Under pressure, the water is squeezed out of the soil and it sinks. A material was needed that would provide a firm sub-base without putting too much weight on the water and gas pipes buried beneath. The project managers decided on styrofoam blocks two meters long by one and a half meters wide and deep which are now being laid as a foundation along part of the route. "This method is frequently used in Vancouver," says Viduka, "but in Europe it is virtually unknown. I find that exciting." And there is another reason why he likes working on the Golden Ears Bridge: "In Germany a project of this size would be split between various firms. But because here we are doing everything from design to commissioning and later operation, I have much more scope for creativity."

A LEAP IN THE DARK

"It feels almost as if you've been dropped in by parachute," Michael Heerdt explains the feeling on large overseas construction sites. There is no familiar infrastructure or long-established network to fall back on. "The range of jobs that fall to each individual are therefore all the broader and more exciting." Junior engineers learn to be the kind of flexible all-rounders who in future will be in great demand at Bilfinger Berger.

Late in the evening Mario Viduka checks his mailbox once again. The local gas supplier has made contact: construction work must stop at a particular point along the road, otherwise gas pipes could be damaged. Mario Viduka smiles tiredly — he'll deal with this one in the morning. On the south side of the bridge, the young engineers who share a house are benefiting from Martin Schweizok's time in South Africa, where as well as engineering, he also studied the local cuisine. As the clock strikes eleven, he takes an orange cake out of the oven. "My mother says hot cake gives you stomachache," one of them warns. Then bravely they all dig in. When you have to be up at six in the morning, you can't spend the night waiting for cake to cool. //

THE GOLDEN EARS BRIDGE PROTAGONISTS HAVE SOME THINGS THEY'D LIKE TO SAY

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TO THE NORTH OF THE FRASER RIVER LIE THE GOLDEN EARS MOUNTAINS