inform

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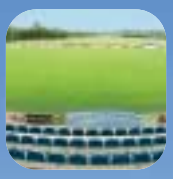
PORT CONSTRUCTION

WHERE SHIPS ARE AT HOME

EUROPEAN FOOTBALL CHAMPIONSHIP

PURE EMOTIONS WITH STRABAG



COVER STORY

VISIONS AT THE PERSIAN GULF

THE MAGAZINE OF STRABAG SE

STRABAG

EDITORIAL

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Originally, it was planned that the cover story of this issue should report on the STRABAG Group‘s activities on the Arabian Peninsula. However, a visit on site soon made us realize that just Qatar and the United Arab Emirates alone are so exciting and multi-faceted that we had to limit the story to just this region. The various activities of STRABAG International GmbH in Oman, those of DYWIDAG International GmbH in Saudi Arabia, or those of Directorate Middle-East on the entire Peninsula will thus feature in one of the next inform issues.

The Children‘s Painting Competition of the last issue was met with great enthusiasm. The more than 100 entries exceeded all our expectations. The editorial team is very happy about this response, as it shows that inform is not just read by the members of the STRABAG staff, but that their families are also interested in information around the STRABAG Group.

We hope you and your family will enjoy the read!

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OUR WORK IN KRAKOW

Krakow is one of Poland's tourist magnets and is characterized by a multitude of buildings from the Gothic, Renaissance, Baroque, and later epochs. In November 2007, Mr. Hans Peter Haselsteiner signed a comprehensive cooperation agreement with the Mayor of Krakow, Mr. Jacek Majchrowski. With this agreement, the City of Krakow and STRABAG are aiming at a close cooperation in transportation infrastructure development as well as building engineering. In doing so, STRABAG is going to support the city in the cultural field as well as regarding its historical monument program. "I am delighted that a company as renowned as STRABAG is trying to establish such a relationship with Krakow," says Mr. Majchrowski. The city's main objective is to secure itself the construction know-how of STRABAG for the upcoming projects. The STRABAG Group has been active in Krakow for several years, for instance as the general contractor for the Galeria Krakowska project. As the first visible sign of the cooperation, Mr. Haselsteiner presented the mayor with a donation of approximately EUR 21,000 for the rehabilitation of the market square in the old town.

CONTACT: **Mr. Marko Mihajić,**
Building and Construction Engineering Directorate Poland

The Mayor of Krakow, Mr. Jacek Majchrowski, and Mr. Hans Peter Haselsteiner signing the contract.

Here, the Vyksa steel plant will soon be taking shape.

RUSSIA

TWO BIG CONTRACTS SECURED

STRABAG's activities in Russia are being enhanced continuously. The latest contracts have been those for the construction of two steel plants of a combined volume of EUR 484 mn. The "Ural Mining and Metallurgical Company" commissioned STRABAG with the turnkey construction of a steel plant in the Western Siberian city of Tyumen. This contract has a volume of EUR 150 mn and the plant shall have a production capacity of 550,000 t per year. Already in September, excavation of the building pit commenced. Completion of the project is planned for April 2010.

By "United Metallurgical Company" (OMK), one of Russia's leading manufacturers of steel pipes, STRABAG was awarded the contract for constructing a steel plant in Vyksa, near the city of Nizhny Novgorod. The contract worth about EUR 334 mn shall be completed by June 2010. Construction kick-off was in January 2008.

For both projects, STRABAG was able to negotiate a cost-plus-fee-contract. This is a contract model, in which the client is involved in planning and cost-relevant decisions. The client pays a certain percentage fee on top of the construction costs to the contractor, who presents his calculations openly.

CONTACT: **Ms. Irina Averkina, Building and Construction Engineering, Company Division Russian Federation**

NEWS

M6 HUNGARY – DEAL OF THE YEAR

WE WON AGAIN!

The "European PPP Deal of the Year" award, introduced by the industry magazine "Project Finance International" (PFI) is not new to STRABAG. Already back in 2004, the M5 in Hungary got honored with the PFI award as "European Infrastructure Deal of the Year" (aka). In 2007, this coveted award went to the West German Proton Therapy Center in Essen (WPE) (see inform 2/2007). And, this year, the STRABAG Group is delighted to have won this award once more, namely for the financing of the Szekszárd – Pécs section of the M6 in Hungary. The magazine praised the "Mecsek Autópálya" consortium, led by STRABAG, which managed to fix the financing of more than one billion Euros in record time. Financial closing was achieved within eight weeks from tender submission and just nine days after contract acceptance. The project comprises the construction of 78 km of motorway and four tunnels. The project is carried out in a public-private-partnership (PPP) approach. After a sportily short construction time of 28 months, the consortium will operate the motorway under a concession contract concluded for a term of 28 years. This makes STRABAG the holder of motorway concessions in five countries, and is a success which acknowledges the joint and transnational efforts of all colleagues, without whom this fast success would not have been possible. We hope that this excellent cooperation will continue, especially in view of the fact that the Tolna consortium (again led by STRABAG) for the next phase of the M6 has just been prequalified.

CONTACT: **Mr. Thomas Höfner, Infrastructure Development, Vienna**

STRABAG team (from left): Thomas Höfner, Rainer Allitsch, and Oliver Kleebach.

Contract execution with representatives of Siemens and Satellic. To the very left: Werner Kunz (STRABAG).

COOPERATION AGREEMENT

STRONG PARTNER FOR RUSSIA

For the enormous tasks we have to tackle in Russia we need strong partners. With two cooperation agreements, STRABAG has managed to win Siemens to act this role. A consortium was formed for the development of a road toll system and was also joined by the T-Systems subsidiary Satellic. According to current estimates, the upcoming large infrastructure projects in Russia will require the introduction of a road toll collection system. The plans for developing some 3,200 km of new motorways in Russia and Ukraine within the next five years open up a huge potential for the three companies.

In addition, a letter of intent was signed with Siemens concerning the execution of selected large-scale projects in the course of the preparations for the 22nd Olympic Winter Games in Sochi. Very soon, the Russian government is going to invite tenders for the upcoming large projects, like the development of sports facilities, the building of the Olympic Village, the construction of hotels, or the improvement and development of infrastructure and communication networks. The first projects, for which the two companies are likely to tender together, are a railroad project, the construction of a cement plant in the framework of the joint venture with Basel Cement, the enlargement of the airport, and the construction of power plants and the sea port. "The letter of intent was a logical consequence of the strategy we follow in Russia. We are convinced that the joint know-how will provide us with a huge competitive edge in pursuing contracts in Sochi," explained Hans Peter Haselsteiner when he signed the contract.

CONTACT: **Ms. Nicole Ziegler, Group Communications, Vienna**

DONATION

A GOOD "JUMP START"

In today's world, computers are so important that no generation can turn a blind eye to them. For the senior citizens, who did not grow up with e-mail, Internet, and text processing, it is particularly difficult to enter the modern PC world. To give them a good "jump start", Bürgerzentrum Engelshof e.V. offers special training courses for seniors. Bürgerzentrum Engelshof is a registered charitable association, acknowledged provider of voluntary welfare service, and a member of the German Parity Welfare Association and of the North Rhine Westphalian Working Group of Socio-cultural Centers. The weekly one-hour training courses for six seniors are held six times. Absolute beginners are made acquainted with working on and with the computer. Upon initiative of the Transportation Infrastructures Directorate Cologne, BRVZ IT supports this program with two no longer used laptops. "We want to make many aspects of everyday life easier for the elderly. There are so many things that can be done more easily with a computer, starting from writing letters, managing the household budget, or even carrying out a hobby," says Ms. Uschi Kastell from the Bürgerzentrum.

Also delighted about a donation of two laptops was the association Benedikt Labre e.V. – OASE. Among other things, this association helps the homeless.

CONTACT: **Mr. Hans Peter Justen,**
Transportation Infrastructures Directorate Cologne

Hans-Peter Justen handing over the laptops for the charity jump start initiative.

HONORED

OUR MAN IN RUSSIA

Gerhard Gritzner after the award.

Mr. Gerhard Gritzner, commercial division manager for STRABAG in Russia, is a globetrotter when it comes to building. Between 1979 and 1990, he was sent to Libya, Czechoslovakia, and Iraq. There, he turned out to be such a successful negotiator, that in 1991 he was designated as the one to open up the way for STRABAG into the Russian market in Moscow. Since then, the 56-year old has climbed the career ladder up to Head of Company Division Russian Federation. It had all started out in 1973, when he joined the Upper Carinthian construction company Isola-Lerchbaumer. On 23 January 2008, Mr. Gritzner was awarded the Great Badge of Honour for Meritorious Service to the Republic of Austria at the professional title award ceremony for deserving teachers and pedagogues. Gritzner was honored for his professional advancement within the STRABAG Group: During his work in the most various parts of the world, he always served as a broker for Austrian and Carinthian businesses, and in his present function as Company Division Head in Russia, where he is responsible for a staff of more than 2,500, he is tackling huge challenges, too. The Badge of Honor for Meritorious Service to the Republic of Austria is the most significant national decoration awarded in Austria by the Federal President or on his behalf. There are 15 different types of badges honoring meritorious service, in particular in the fields of politics, economy, culture, intellectuality, or honorary work. The editorial team of inform extends its most heartfelt congratulations!

CONTACT: **Mr. Gerhard Gritzner,**
Head of Company Division Russian Federation

NEWS

TRAINING

BUILDING MATERIALS TESTER GRADUATED WITH HONORS

Mr. Michael Lippmann made it! At the second onset he found his dream job, and he did so with honors. 27-year old Lippmann finished a training course for building materials tester for bituminous masses and graduated as “best of nation”. “The most interesting aspect of my job is that I‘m not just responsible for quality testing on site, but that I can also exert influence on the technological settings of the processing plants,” says Lippmann describing his job. Yet, all had started out totally different, for the young man from Saxony first finished an apprenticeship in industrial electronics. He even worked in this job for two years through a temporary employment agency, but then he started to feel the desire for giving in to his real penchant. “Since 10th grade, I had been longing for a job dealing with quality assurance,” remembers Lippmann. So, on the spur of the moment, he applied successfully for a new apprenticeship place at BBS Baustoffbetriebe Sachsen GmbH, which had been taken over by Deutsche Asphalt. That this had been the right decision was proven by his final exam results: He made 96.4 out of 100 possible points. In December 2007, he got honored for his excellent graduation in Berlin. The editing team of inform is happy to join the line of prominent congratulators!

CONTACT: **Mr. Michael Lippmann, Central Business Unit TPA, Germany / International Projects**

Prominent congratulators: Michael Lippmann talking to TV presenter Babara Schöneberger.

CONTRACT WON

BIG-TICKET CONTRACT IN SWEDEN

The Directorates Ground Engineering and Tunneling were contracted by the Swedish railroad company Banverket to take the lead in the building consortium constructing the first section of the Stockholm local railroad line “Citybanan”. The contract is worth EUR 142 mn and comprises the construction of the approximately 450 m long two-track Söderströms Tunnel, inclusive of planning and execution of a tunnel that is floated into position, several bored tunnels, and comprehensive special civil engineering measures. Construction kick-off for the tunnel, crossing the Mälaren Lake in the center of Stockholm and connecting to the existing main station, is scheduled for May. Total construction time for the first lot will be four-and-a-half years. The Citybanan project has been planned for more than 20 years and shall open up the bottleneck at the southern access to Stockholm Main Station. The new local railroad line will run in a 6 km long tunnel with several surface and underground stations, and will commence operation in 2017. The total investment volume will amount to about EUR 1.7 bn.

CONTACT: **Mr. Frank Haehnig, Tunneling and Services, Division Tunneling, Ground Engineering**

Route of the “Citybanan” local railroad in Stockholm.


DUBAI BANK

COUNTRY REPORT

VISIONS AT THE PERSIAN GULF

Hardly any other region in the world has been experiencing a boom similar to that witnessed in the countries of the United Arab Emirates and the Emirate of Qatar. Like in a gold fever, international businesses flock to the Arabian Peninsula. There is a lot of money to be made there, provided that you pay attention to some particularities of the market. For inform, Bernd Hinrichs visited two countries of the "Arabian Nights".

A jeep takes us out of the city into the desert on newly-paved roads. Here, the word desert describes a pebbly desert with rocks to be found everywhere, hardly any shrubs, and with high-voltage lines cutting the horizon. That's my first impression of Qatar. Yesterday, I arrived by plane at Doha, the capital of the Emirate of Qatar, to do my job, which is to record the activities of the STRABAG Group in this state as well as in the United Arab Emirates (UAE). The people on the plane appeared to be on vacation, and talking to some of them I learned that for most of them Doha is just a stopover on their way to the beaches of Southeast Asia, for Doha, like Dubai, is a huge aviation hub.

Dubai: construction boom under palm trees.

SPONSORS WANTED

We leave Doha in southern direction. Just before Wakrah, a city quarter of Doha, we arrive at the construction machinery site and office of “Al Sraiya - STRABAG Road & Infrastructure WLL”. A particularity of the Arabian market is that foreign businesses need a so-called sponsor, i.e. a local company, for being allowed to operate in this country. This local business will remain at the foreign company‘s side as a kind of “godfather”. In Qatar, STRABAG International GmbH (SI) as well as Züblin International GmbH (ZIG) under the name of Züblin International Qatar LLC cooperate with Al Sraiya, whereby it should be mentioned that this cooperation is a real partnership rather than a sponsor-beneficiary-relationship.

While SI is active in transportation infrastructure development, ZIG and STRABAG Qatar WLL see to building and construction engineering in this region. On the Arabian Peninsula, these two companies together form Directorate Middle-East.

DRIVER TRAINING FOR WORKERS

SI is new to Qatar and is currently implementing the projects “Roads in Wakrah North and South” and “New Izghawa Link Road” together with Al Sraiya. “In Wakrah we have to develop a new infrastructure for entire city quarters,” explains Mr. Frank Rohde, the division manager in charge. 100 km of sidewalks, sewage systems, street lamps, and some 2,800 rain-water trenches. The latter, in particular, are a real challenge, for Qatar‘s geologic make-up is a sand layer of a maximum depth of 50 cm on top of some 3 m of hard and massive rock. Hence, every single one of these trenches reaching 3 m down into the subgrade needs to be drilled.

I want to get a closer look at this and take a ride around the construction site together with Mr. André Müller, construction supervisor in Wakrah. Looking around, I can see foreign workers everywhere. Most of them are from India, Pakistan, and Nepal. “Sooner or later, we will have some 500 people from the most diverse cultural backgrounds working on this site. It requires strict hierarchies, to manage them all,” says 31-year-old Müller. Yet, to build up an appropriate workforce is the biggest problem on the Arabian Peninsula. Most workers lack the necessary experience in construction work. “We even had to carry out driver and machine operator trainings, to enable people to operate the machines,” Rohde tells me once we are back at the office. Part of the workers were recruited directly on site in Asia, others came via agencies. And, for project managers and construction supervisors, who normally come from Austria and Germany, it is of equally tremendous importance to have experience with the Arabian construction market – which unfortunately is a rather rare qualification.

Top: Precast concrete element production for rain-water trenches in Wakrah. Bottom: The Injazat Data Center meets all security standards.

The Al Naeem Shopping Mall in Ras Al Khaimah is taking shape.

Yet, there are exceptions, like e.g. Mr. Jürgen Wenge, who in Wakrah, among other things, sees to transportation and accommodation of staff, work processes, and production of precast elements. I've hardly entered his office, when he offers me a cup of steaming hot water. "In the desert it's best to drink hot water. Take it from an old desert rat," he smiles. And, one soon finds out that the lively man from Dortmund knows what he is speaking about. "I introduced weekly meetings at the workers' camps to which every nationality may send a delegate. In this way we solve problems quickly and unbureaucratically."

NEXT STOP: HEALTH CHECK

On the following day, I meet with Mr. Herbert Longitsch, commercial director of STRABAG Qatar WLL in Doha. The company has a white collar staff of about 230 and some 800 workers in Qatar. "We have some 27 nationalities working in this company," says Longitsch. The diversity of nationalities is particularly impressive among the blue collar staff, and that's even though every foreign worker must undergo thorough medical testing to be allowed to enter the country. These checks include blood and AIDS tests, x-rays, and the taking of fingerprints.

"At present, we are engaged in three projects," Longitsch tells me. Apart from the ongoing large-scale project of Shell, the world's second "Gas to Liquids" plant (the volume of the contract awarded to STRABAG Qatar amounts to EUR 72.5 mn), the Beach Villa of the Emir of Qatar (see inform 1/2007) and the interior finishing of the Misnad Tower in Doha are nearing their completion.

Züblin International Qatar LLC too is currently implementing three projects in Qatar. Besides a contract for the construction of seven schools, and one for building a shopping center for some EUR 28 mn, the Mesaieed Housing Project – with a contract volume of approximately EUR 86 mn – is ZIG's biggest contract in Qatar. The first project phase will see the construction of 600 residential units, which will be added by another 290 in the second phase. "At peak time, this project will involve a labor force of up to 2,000," so I am briefed by Mr. Jean Khouri, director of Züblin International Qatar LLC.

Top, right: Driver training for workers in the desert.
Bottom: Jama A. Aden (r) and Josef Kink at the Izghawa Project.

Jürgen Wenge cooperating with Singh, an Indian staff member, who has been working for STRABAG for 32 years.

CITY OF SUPERLATIVES

On the next day, I take a plane to Dubai – a real boom town, where gigantic buildings are mushrooming. What Qatar is aiming at, has already become reality in Dubai. It is a Friday, an ideal day for traveling, for Friday is the weekend for Muslims, and thus a day off work. On this day of the week, the taxi is able to move forward on the roads, which is not a matter of course in this city plagued by traffic gridlock.

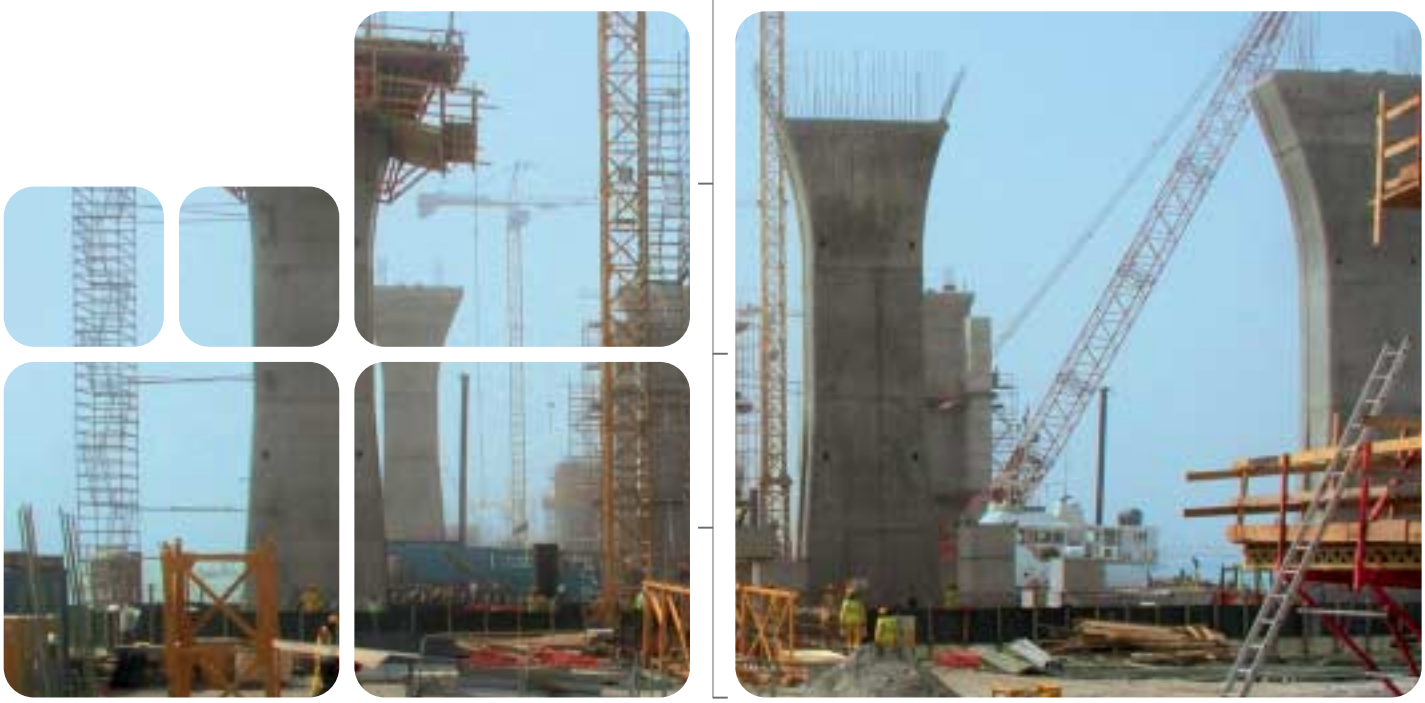
I don‘t have any time to get accustomed, for Ms. Heike Wiume, technical director with the Directorate Middle-East, is due to pick me up the next morning. On a five-lane motorway, we travel to Abu Dhabi, to take a look at the probably most spectacular project of STRABAG on the Arabian Peninsula, the Saadiyat Bridge.

The 1.4 km long structure connects Abu Dhabi with Saadiyat Island, where a gigantic holiday and residential estate is planned. “What makes this bridge so fascinating is that it combines all bridge construction methods in one project. We use the incremental launching method, free-cantilevered construction, and the conventional bridge construction method,” explains project manager Mr. Uwe Benkert. This project involves a labor force of about 1,000. No less than six boats are needed to take them to the pylons and back. Roughly two thirds of the laborers are from Thailand, the others mainly from India and Pakistan. The bridge is built in a joint venture with the local company Saif Bin Darwish, which carries out some 14% of the contract. On STRABAG side, Directorates ZIG with its division Direct Export HH, and Middle-East with the division Abu Dhabi are involved in the project. In addition, Züblin Ground and Civil Engineering were recruited as subcontractors for the piled foundation.

A boat takes us over the turquoise-blue water to one of the pylons. At this place, the sea is up to 16 m deep. “Once, our workers saw a good-size shark swim by,” remembers Benkert. When I ask him whether he likes staying in Abu Dhabi, he says jokingly, “I only just arrived five months ago, and I want to stay at least 20 years more.”

HIGHEST SECURITY STANDARDS

On the way back, we visit yet another construction site: the Injazat Data Center – a project for technology aficionados. The building will house Internet servers, and in order to guarantee their functionality, the technology quarters require highest security standards of the so-called T4-category. Seeing my questioning look, Ms. Wiume just says, “That‘s like using a belt and suspenders together!”



Construction site of superlatives: Saadiyat-Bridge in Abu Dhabi.

What she meant by that I learn on site. T4 means that all the standard security measures are taken, but twice. For instance, if three generators are needed for power supply, then usually an additional one is held in reserve for the event that one of the three breaks down. At the Injazat Data Center that's the same, but, in addition, another complete system (three generators plus a spare one) is held in reserve, as well. A gigantic effort. This building is the only one of T4 standards in the Middle East. The temperature inside the server rooms must not exceed 23°C. To provide for the required cooling, approximately one million cubic meters of air need to be exchanged per hour. That's roughly the volume of a soccer stadium.

Yet, not just at the Data Center security is of top priority. The next construction site we visit, the Airport Operations & Crisis Center, is located right on Dubai Airport. Here, a 5-story building is erected for a price of EUR 19 mn which in times of crisis around the airport, like for example in the event of hijacking, shall serve as the operation headquarters for the security team. Some 400 laborers are working on the construction site and erect a building, which is the second of its kind in the whole world.

DESERT TURNING URBAN

My visit on the Arabian Peninsula is slowly nearing its end. Leaving Dubai, we are on our way to yet another Emirate: Ras Al Khaimah. Those of you, who love the superlatives of Dubai, might be a little disappointed about my last stopover. There are some industrial plants, hotels here and there, and construction sites in all nooks and corners, too. But, the development boom that has long hit other parts of the Arabian Peninsula seems to have just started in Ras Al Khaimah.

Until April 2009, the Al Naeem Shopping Mall will be constructed for about EUR 60 mn. I look around and wonder whoever will come shopping here. Noticing my quizzical expression, project manager Mr. Peter Fausel explains, "These are the Emirates! Where there is desert today, there will soon be huge residential developments with masses of customers for the shopping center." He seems to have a point, for already today 85% of the gross leasable area have found a tenant.

This makes Al Naeem symbolic for the impressions I got during my trip to Qatar and the UAE. Economic growth in Qatar in 2006 was an unbelievable 24%. The UAE reported a stable 8%. The desert is being turned into impressive landscapes, at a pace that left me overawed. All in all: a place at the Persian Gulf, where visions come true.

The first phase of the Mesaieed Housing Project comprises approx. 600 residential units.

EUROPEAN FOOTBALL CHAMPIONSHIP

PURE EMOTIONS WITH STRABAG

When at 6:00 p.m. on 7 June the whistle is blown for the kick-off of the match between Switzerland and the Czech Republic, Europe's sports aficionados will be delighted that the Euro 2008 in Austria and Switzerland has finally started. Until 29 June, matches will be held in altogether eight football stadiums.

The turf of the EM stadium in Salzburg was successfully christened. Left: The Euro 2008 promises pure emotions.

"Expect Emotions!" That's the official slogan of the European Football Championship 2008 in Austria and Switzerland. UEFA president Michel Platini is convinced that this slogan summarizes all that the championship represents. "A slogan which describes in a nutshell what the UEFA European Championship 2008 has got to offer: all kinds of emotions, joy, disappointment, relief or high tension right up to the final whistle."

That the more than one million spectators will be able to really experience pure emotions is also owing to STRABAG, for over the last years, the Sports Facilities Construction division of Transportation Infrastructures Directorate Lower Austria, Vienna, Burgenland built several sports facilities for the European Championship which shall serve as training and preparation centers for the teams.

ARSENAL LONDON FOR THE TEST

One of the venues in Austria is the Salzburg football stadium. Here, as a test for the Euro 2008, the existing artificial turf had to be covered by natural grass. After the match, there were just two days time to change the football field back to the original artificial turf. This was due to the fact, that the training schedule of the local team, the Salzburg Red Bulls, was not to be interrupted any longer. The new natural turf was bedded on the existing artificial turf, a double-layer fleece, a 15-mm elastic protection mat, another fleece layer, 10 to 12 cm of humus, and a sand mixture.

Because of the higher subgrade, the height of the goals had to be adjusted as well. Irrigation was provided for with the help of mobile irrigation devices, because the existing, built-in, permanent irrigation system was covered too.

The first match in the stadium after the turf renewal was a friendly match between Red Bull Salzburg and Arsenal London on 25 July 2007. The match in the sold-out stadium ended 1:0 for Red Bull Salzburg. A good sign for the Austrian football nation, or not?

FOR THE CROATS AND THE AUSTRIANS

In March 2008, a training center was completed in the Styrian town of Bad Tatzmannsdorf. During the Euro 2008, the Croatian national football team will use this center as its training facility. This training center provides a natural turf football field of approximately 8,100 m² and an artificial turf pitch of a size of approximately 6,100 m². Additional natural and artificial turf areas are used for goal keeper training and warm-up.

To ensure irrigation of the lawn, a large cistern system was developed. Since the winter set in at the time the artificial turf was laid, a special adhesive had to be used that also reacts in cold and wet weather conditions.

In Stegersbach, Burgenland, the temporary home of the Austrian national football team during the Euro 2008, the Sports Facilities Construction division has been working on a football sports center since 2006. This project had been contracted in several phases.

In 2006, a natural turf soccer field of a size of approximately 8,000 m² was built. In fall 2007, the division's team embarked on the construction of an artificial turf pitch of roughly 7,000 m². This soccer field was finished in February 2008.

The special challenge of this project was the construction of the artificial turf subgrade. Since this turf was to be laid on an instable, sloping terrain, the subsoil had to be stabilized with quicklime.

The Euro 2008 will be pure emotions – and it will offer football of the highest quality. That's what the organizers promise. The Sports Facilities Construction division at least has done its bit to contribute to the success.

CONTACT: **Mr. Bernd Kacnik, Transportation Infrastructures Directorate Lower Austria, Vienna, Burgenland**

Here in Stegersbach, too, national teams will practice.

Balanced lifting at night.

3 parts of the bridge before final assembly.

BALANCED LIFT METHOD

RESEARCH AND INDUSTRY TEAMED UP

In order to cut costs in the construction sector, ever-new construction methods are being invented. A new bridge construction method developed at the Vienna University of Technology is supposed to considerably reduce construction time as well as building material costs. STRABAG carried out a field test.

"That's the way we have always done it," is one of the most frequently used sentences in the construction industry. That it not always has to be this way is demonstrated by the Vienna University of Technology. There, Mr. Johann Kollegger from the Institute for Structural Engineering developed a new bridge construction method, the so-called "balanced lift method". In contrast to the traditional bridge construction methods, the new method foresees that the bridge girders are built in vertical position using climbing formwork techniques – very similar to the way a pier is built – and are later on rotated into their final horizontal position. The compression strut variant of this method uses compression struts to push the vertically concreted bridge girders upwards and lift them with the help of a hydraulic press. The second variant – the tension strut technique – uses a tension cable to pull the bridge girders upwards at a speed of 5 to 10 meters per hour, whereby they roll against each other in the center of the rolling joints, designed as rotating cylinders, until they have reached their final horizontal position. For constructing the

The initiative for supporting Mr. Johann Kollegger in field testing the balanced lift method (tension struts and compression struts variants) and in further developing the method for use in practical building came from the Company Division Building and Construction Engineering Europe. The application for support of the research project by the Austrian Research Promotion Agency (FFG, Österreichische Forschungsförderungsgesellschaft) was submitted and approved of in the name of STRABAG. At STRABAG, company Division Building and Construction Engineering Europe is responsible for compliance with the promotion rules and Directorate Special Civil Engineering Vienna / Lower Austria for build quality.

joints, tried-and-tested methods of steel and concrete engineering can be used.

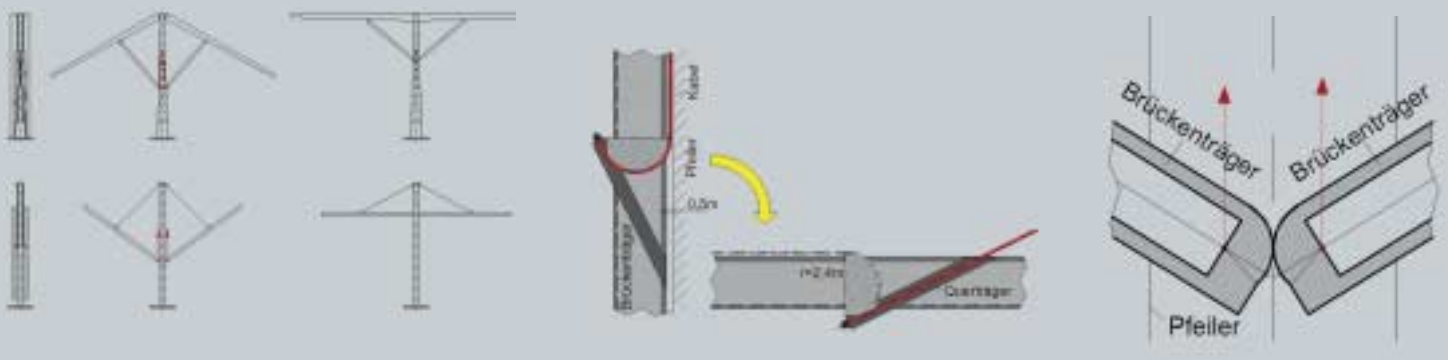
The advantages of this invention, for which a patent is pending, are the higher speed of construction and cost reductions. Vertical concreting, for example, does not require a falsework structure. And, the bridge girders are subjected to lower flexing loads and can thus be built faster. In addition, lots of building material will be saved when compared to the traditional bridge construction methods, for the struts and cables reduce the free span of the bridge girders, which, as a consequence, don‘t need to be as massive.

TESTED ON A SMALL SCALE

In December 2007, the practicality of the new bridge construction method was assessed. This assessment involved a field test on a model bridge on the “Aspanggründe” test premises in Vienna conducted by the Vienna University of Technology and STRABAG. The purpose of this test was to demonstrate the lifting procedure of the bridge girders and the rolling of the rotating joints against each other. First, the tension strut variant was tested on a 1:10-scale model of a bridge with a span of 170 m and a pier height of 80 m. A team of Directorate Special Civil Engineering Vienna / Lower Austria built the bridge elements using a conventional formwork technique and mounted them precisely on the bipartite pier. The joints of the bridge were built as close to reality as possible by using prefabricated steel fittings. In January 2008, the compression strut variant was tested with equally successful results using the same bridge pier.

CONTACT: **Mr. Mario Rabitsch, Building and Construction Engineering Europe, Directorate Technical Staff Positions**
Mr. Herbert Weier, Building and Construction Engineering Austria, Directorate Special Civil Engineering Vienna / Lower Austria

STRABAG as a research promoter.



The balanced lift method in its compression strut and tension strut variants.

Great banquet for the ceremony.

RAILROAD TUNNEL

LONGEST RAILROAD TUNNEL IN LOWER TYROLEAN INN VALLEY

Vomp and Terfens are two adjacent communities in the Tyrolean Lowlands. Located in the Lower Inn Valley, they are prime destinations for active vacationers in search of quietness. And this won't change with the railroad tunnel between Vomp and Terfens which is part of the European railroad improvement project "Brenner Railroad Axis".

On 28 November 2007, breakthrough was celebrated at this tunnel, which is the longest on the Lower Inn Valley route. It measures a whole 8,480 m and, so far, has had the STRABAG team work on it for four years. The tunnel built for the Brenner Eisenbahn GmbH (BEG) costs about EUR 175 mn.

After kick-off of the 8.5 km long tunnel project in August 2003, the building consortium "Tunnel Vomp-Terfens" under the technical lead of STRABAG embarked on the work right away. After a short period of time used for construction site preparation, the wife of the Tyrolean governor and godmother of the tunnel, Mrs. Luise van Staa was able to do the official sod-turning on 21 November 2003.

MOST DIFFICULT GEOLOGICAL CONDITIONS

The years that followed, saw the completion of the Terfens excavation, as well as that of the Vomp West, Vomp East and H5V excavations and the remaining driving of Evacuation Tunnel West. Work was carried out 24/7 and, in peak times, involved about 200 men who excavated approximately 1.4 million m³ of rock and soft ground, which is as much as about 140,000 truck loads, and placed some 550,000 m³ of concrete. The distance between the tunnel and the ground surface varied from hardly one meter in the near-surface tunnel to up to 100 m thick rock in the 3-track drill-and-blast excavation section.

Heading in the soft ground was a major geological and hydro-geological challenge and could only be managed by using all methods and measures known to tunnelers. Apart from traditional support methods using spiles, forepoling plates, or pipe umbrellas, the engineers also had to resort to tube-à-manchette grouting for soil conditioning.

WORK UNDER COMPRESSED AIR

Yet, the biggest challenge on the Lower Inn Valley route – tunneling-wise as well as psychologically – was the compressed-air tunneling part of section H5V.

Left: Mr. Hans Peter Haselsteiner praising the work.

Left: The tunnel from outside.
Right: Tunneling between Vomp and Terfens.

This method required the building of a 1 m thick and strongly reinforced concrete wall into the approximately 130 m² two-track tunnel clearance. Locks, bulkheads, and compression chambers, which were provided solely for this purpose, were installed into the pressure wall and were the only passages for team, equipment, and material into and out of the “normal” excavation sections. By applying this method, the pressure in the excavation section in front of the wall could be raised by up to 1.5 bar which prevented ingress of in-situ mountain and ground water or at least reduced such ingress to reasonable amounts. With the help of the compressed-air technique, it was possible to manage even the most difficult stretch of the altogether 39 km long Lower Inn Valley route. “At this construction site, all the special techniques became the rule – and the rule became the exception,” summarizes Mr. Christian Kaiser, STRABAG project manager at the Vomp-Terfens Tunnel.

CEREMONIOUS DEDICATION

On 28 November 2007, Luise van Staa and Hans Peter Haselsteiner were present to witness the much longed for tunnel breakthrough. And despite all the joy and praise about the successful breakthrough and all the efforts that had led to it, there was still time for a glance into the future, namely towards the Brenner Mountain, which will be the next challenge after finishing of the remaining excavation of bench and floor and the completion of the inner shell until spring 2009.

CONTACT: **Mr. Christian Kaiser,**
Tunneling and Services, Division Tunneling (IQ)

Top: The tunnel portal.
Bottom: Witnessing the breakthrough.

CRANE HOUSE SOUTH

EYE CATCHER IN COLOGNE'S RHEINAU HARBOR

One of Cologne's largest urban development projects is steadily taking shape. The Rheinau Harbor. Here the Building and Building and Construction Engineering Directorate North Rhine-Westphalia is erecting the second of a total of three "Crane Houses". With a contract value of 33.5 million Euro, construction work is due for completion in March 2009.

The Rheinau Harbor is located less than 1,000 m from Cologne Cathedral and, with a length of roughly two kilometers and width of up to 200 m, lies between the Rhine and Cologne city south, reaching to the southern edge of Cologne's city center. Development measures for this site include both construction work and the rehabilitation of listed buildings. The basic outline design for the Rheinau Harbor project now underway was the result of a 1992 urban planning ideas competition. The final concept as "Crane House" was then developed further in several study groups and workshops in the Hamburg BRT - Bothe, Richter, Teherani - Architects' Office.

The three buildings form a crane shape typical for harbours where cargo ships are loaded and unloaded. 70.20 m long, 33.75 m wide and 61.60 m high, the Crane House South will be visible from afar. All in all, 17 storeys are to be erected above ground level and one below.

The orthogonal layout of the Crane House is determined by three building structures: together with the five-storey frame structure situated above, the western main tower block reaching from ground level up to the ninth storey forms a massive right angle of equal width which is supported at the height of the longitudinal axis by an eastern, considerably slenderer, secondary tower.

LOAD-BEARING STRUCTURE

The supporting structure of the Crane House is carried out in reinforced concrete. Loads from stories 10 - 14 and technical installations in the staggered top storey are taken up by a 3.60 m thick, prestressed concrete beam grid at 9th story level. A cross beam reaching over three stories is arranged over the small strut, while

The orthogonal elevation of the Crane House is determined by three structures.

All in all, 17 storeys and a basement are to be erected.

The Crane Houses in front of Cologne Cathedral.

prestressing elements required for the transfer of loads are arranged in the cross-sections of the beam system. The foreseen structure creates supporting surfaces in the “bearing story”. Construction of the cantilevering bridge story at a height of 35 m calls for a heavy duty scaffolding to take up loads of approx. 48 MN from stories nine to eleven prior to prestressing of the tendons. Transverse stiffening walls and columns complement the structural concept and transfer loads to the bored pile foundation.

All standard intermediate floors have a thickness of 250 mm while the arrangement of reinforcement within the floors, particularly in the column zone, allows for the embedment of pipes required for activation of the structural components.

UNIQUE CONCRETE

It was originally planned to base the Crane House solely on the ground-plan area of the two struts. However, taking into consideration the vibration behavior of the building structure there was an urgent necessity for the two building components to be joined together in the foundation soil to prevent the building being endangered even if there should be more severe horizontal loads such as could occur, for instance, with high winds or earthquakes.

The foundation was carried out at the same time as the underground car park. High strength concrete was used both here and in the lower stories, so enabling the architects to choose a more flexible ground-plan layout.

“The fact that a high strength, grade C60/75, concrete has not been installed as bulk concrete in this quantity in Germany to date deserves special mention,” explained Manfred Biwer, the Project Manager at Rheinau Harbor. In all, 120, 000 m³ in C30/37 to C60/75 quality were installed for Crane House South, whereby roughly 2,500 t reinforcing steel and approx. 60 t prestressing steel were used.

CONTACT: **Mr. Manfred Biwer, Building and Construction Engineering Directorate North Rhine-Westphalia**

Sheet-pile walls at the port entrance.

Port entrance at low tide.

PORT CONSTRUCTION

WHERE SHIPS ARE AT HOME

Over the last decades, East Frisia has developed into a much sought-after tourist destination. Not least because of this, the existing infrastructure had to be improved considerably in many places. In particular the ports that cater to the ferry connections to the East Frisian Islands and are home to many sports boats and the shrimp fishing fleet were in dire need of upgrading.

The fishing village Neuharlingersiel was first mentioned in a document more than 300 years ago. Since then, the port has continuously changed its appearance. And yet, it remains what it has always been: the heart of Neuharlingersiel and the “window to the sea”. Moreover, the ferry port has been the link between the East Frisian Island of Spiekeroog and the mainland since 1792. Back then, a weekly ferry connection to Spiekeroog had been introduced, and since 1842 there has been a daily ferry service. Today, nearly all the supply and tourist traffic passes through the port, and in 2006, no less than about 80,600 guests visited the island to stay for altogether 565,700 nights.

Aside from ferry traffic, the port of Neuharlingersiel is also home to many shrimp fishing boats. With all these functions to fulfill, the old port soon reached its capacity limits.

THREE DIVISIONS INVOLVED

A project of Hafenzweckverband in cooperation with the planning joint venture NLWKN / Thalen Consult held out the prospect of relief. The plans foresaw an enlargement of the port and the integration of an additional harbor basin for sports boats, which so far had had to be treated rather stepmotherly. Top priority was to not impair ferry traffic.

With the building consortium Fährhafen Neuharlingersiel, of which STRABAG was a member, a powerful team was awarded the contract for implementing this project. While all earthwork, underground works, and floating dredger works including dyke construction are carried out by the other consortium partners, the STRABAG share in the project was handled by three divisions.

Transportation Infrastructures Directorate Hamburg had two divisions working on this project. While the Stralsund Hydraulic Engineering Division was seeing to sheet pile and batter pile driving as well as hydraulic steel construction, Division Northwest is in charge of the asphaltic reinforcement and revetment grouting. Revetment grouting is a coastal protection measure, in which the rocks used for dyke revetment that are so typical for the East Frisian coasts are being cemented together with concrete.

Also involved in the Neuharlingersiel project was the Bremen Division of Building Engineering Directorate North. This division delivered the required prefabricated elements and saw to concrete engineering.

PROBLEM-FREE SHEET PILE DRIVING

For shoreline stabilization in the new port area, a construction made of sheet piles with a casing of up to 8.3 m long precast concrete elements, reinforced concrete cross beams, and batter pile tie-back was used. The cavity between the precast elements and the sheet-pile wall was backfilled with concrete. In order to provide for a permanent corrosion protection of the sheet pile, the “concrete casing” of the sheet pile was fixed 0.6 m underneath the future harbor bottom. Since these areas were never free of water, not even at low tide, nearly all precast concrete elements of the approximately 420 m long structure had to be mounted employing divers.

While sheet pile driving was relatively hassle-free, even in the semicircular areas delimited by the port protection walls (the so-called Höfts), batter pile driving was more difficult. Since driving from the water was not possible in order not to disturb the ferry traffic and because of the tides, the piles had to be driven from land.

CONTACT: **Mr. Frank Liedtke,**
Transportation Infrastructures Directorate Hamburg

Overview of the Neuharlingersiel Port.

DESY

THE WORLD'S LONGEST FOUNDATION SLAB

The German Electron Synchotron DESY is one of the world's leading accelerator centers. DESY develops, constructs, and operates large accelerator facilities and uses them to investigate the structure of matter. One of the things built, in order to turn the existing PETRA storage ring into the world's most powerful storage ring source for synchrotron radiation, is an experimental hall.

The research center's walls and ceiling are being mounted.

Left: Several pumps were used for pouring the concrete.
Right: A close-up of the concreting works.

The experiments carried out with the photon beam of a diameter of no more than about 1/10,000 mm are extremely sensitive to even the slightest static or dynamic movement, expressed in millionths of a meter. For this reason, the 272 m long, 23.65 m wide, and 1 m thick foundation slab had to meet particularly high requirements regarding allowable deformation, in particular as to stability in vertical direction, crack-freeness, and special evenness of the surface (evenness tolerance: 4 mm on 10 m of the slab's epoxy coating).

In order to fulfill these requirements, the slab was completely decoupled from the rest of the building and "floats" on a bituminous slide layer. The slab was cast as a monolith in the watertight, closed hall by five pumps operating simultaneously. The upper 50 cm were made of steel fiber concrete with a fiber content of 75 kg/m³ and a w/c-ratio of 0.43. 76 workers were involved in concreting in shift operation. The required evenness of the concrete surface was achieved by using two vibrating beams. All the individual steps of production, execution, and quality control had been laid down in advance in a detailed logistics and quality control concept.

After 60 hours of uninterrupted concreting, 6,497 m³ of concrete were mixed, delivered, checked by Division North of TPA, pumped, and placed, leaving all the team members feeling satisfied and a little bit proud.

Meanwhile, the foundation slab has shortened by the planned, approximately 5.0 cm on both ends. To date, we know of no other foundation slab in the entire world that is of similar or greater length and was cast without joints as a monolith.

CONTACT: **Ms. Silke Pförtner, Building and Construction Engineering Division Germany, North**

CVTI SR

BUILDING FOR BOOKS

The concentration of the individual parts of the library of the Slovakian Center of Scientific and Technological Information (CVTI SR) which hitherto were located on different places required a new building. Also important in this context was to create an architectural landmark for the city of Bratislava.

The Center of Scientific and Technological Information of the Slovak Republic will not just serve as a library specializing in sciences in the technological field and selected disciplines of the natural, economic, and social sciences, but it is part of the strategy pursued by the Slovakian government that this center shall contribute to making science and technology more popular. For this reason, research results shall be collected at this library and presented to the general public by way of using, for instance, a newly-developed Internet portal. Another task of the center is to evaluate the quality of universities, colleges, and other scientific institutions. And, last but not least, the building will accommodate the offices of the Department of Science and Technology of the Slovakian Ministry of Education.

EYE-CATCHER ON SITE

The building was designed to meet special local requirements. For example, the risalit, i.e. a part of a building that juts out from a building's front over the entire height of the building, was glazed. This glass façade forms the third glass layer shielding off the street noise as effectively as possible. In addition, the façade bestows a very specific and uncopyable artistic appearance upon the building and makes it a new architectural highlight.

The object comprises two basement levels, a ground level, a gallery, and four upper levels. The second basement level serves as the center's library and archive. Aside from parking space for 40 cars, the first basement level provides room for a workshop, the building technology rooms, the standby generator system, the transformer station, and a public shelter for emergencies. The ground floor is publicly accessible and accommodates, among other things, a book store and a cafeteria.

On 19 December 2007, the new home of the Slovakian Center of Scientific and Technological Information was ceremoniously dedicated in the presence of representatives of the Slovakian government: Mr. Ján Mikolaj, Deputy Prime Minister and Minister of Education, Mr. Dušan Čaplovič, Deputy Prime Minister in charge of Knowledge-Based Society, European Affairs, Human Rights and Minorities, and Mr. Ján Turňa, Director of the Center of Scientific and Technological Information.

CONTACT: **Mr. Juraj Hirner,**
Building Engineering Directorate Slovakia 2

A light and friendly place for visitors.

MULTIFUNCTIONAL CENTER

NEW FACE FOR MLADÁ BOLESLAV

Mladá Boleslav, a town in the Czech Republic with a pop-ulation of 43,000, is situated in Central Bohemia north of Prague. In November 2007, the town center got enriched by the new multifunctional center Bondy, built in the immediate vicinity of the headquarters of Czech car manufacturer Škoda.

The contract for the turnkey delivery of the new multifunctional center worth EUR 27 mn went to the Building and Construction Engineering Directorate Czech Republic. The Directorate acted as the general contractor for Raiffeisen Leasing Real Estate, s.r.o., Prague, and Raiffeisen-Leasing, Vienna. Construction work was kicked off back in August 2006, and it took hardly 15 months from the onset of earthworks until the ceremonious opening of the center.

The new multifunctional center comprises two shopping levels, two parking levels, a multiplex movie theater, a gym, and an office center on a total area of approximately 21,000 m². Together with Bondy Centrum a total of 28,000 m² of new trafficways for cars and pedestrians were developed for the city.

A BUILDING WITH FIVE FAÇADES

Bondy Centrum is not just a shopping center located in the most highly frequented part of Mladá Boleslav, but aside from the two-story shopping gallery with a supermarket and ninety stores, a sports center, and a 4-screen multiplex, this center provides the town with 500 new parking spaces plus a separate parking garage of a size of 5,400 m².

Underneath this parking lot there is the bus terminal. The project comprised the construction of new roads around the shopping center plus a bridge over the railroad line.

The supporting structure of the building is made of a combination of monolithic and precast reinforced concrete skeleton. For the movie theater and the sports center, a steel structure was chosen. The building sports a structured aluminum-glass-façade interspersed with variable metal sandwich panels and Eternit patterns.

Shell work at Bondy Centrum.

The multifunctional center is completed turnkey.

The two-level shopping gallery.

Room for 90 shops.

The building‘s rectangular layout is underlined by the roof, which is designed as the “fifth façade”. The plants it carries, as well as its stepped design and tower-like elements provide the roof with a very special character.

ARCHITECTURAL SYMBOLISM

The architects designed the center‘s façade to be symbolic for the region: The struts of the aluminum parts run up in inclined verticals on the parapet walls to overtower the highest-lying flat roofs, and in this manner crown the mass of the individual towers sitting on top of the structure. This dynamic element is meant to symbolize the ascent of the local booming car industry.

The different malls of the shopping area are, location and direction-wise, integrated into the town‘s existing traffic scheme. As a consequence, the malls cross on a small square in the heart of the object, illuminated by a skylight. Some of the 90 stores are directly accessible from the street. Also part of the object is a three-story office building set on top of the object‘s roof and adding to the office space supply in the heart of this industrial region. With this additional use, the project blends thematically into the architectural orientation of the existing development. The use of natural stone on an area of approximately 4,300 m²(!) adds to the center‘s classic appearance.

CONTACT: **Mr. Petr Kafka, Building and Construction Engineering Directorate Czech Republic**

Some 33,000 m³ of concrete were used.

D3

YET ANOTHER SECTION OPENED

On 17 December 2007, the Mezno – Chotoviny section of motorway D3 was ceremoniously dedicated by Czech Prime Minister Mirek Topolánek. The road was built by a consortium under the lead of Transportation Infrastructures Directorate Czech Republic/Slovakia South. The entire completion and handing over to the client is scheduled for June 2008.

The structure named 0306/I is part of motorway D3 (R3) Prague – Tábor – České Budějovice – Austrian border, which again belongs to the European route E55. The now finished section will take the transit traffic on the E-route out of the communities of Sudoměřice near Tábor and Rzavá, which will be a great relief for the local population.

The new section is the northward extension of the sections Chotoviny – Stoklasná Lhota – Tábor South, which were opened back in 1991 and 2004 (see inform 1/2007). At the northern county line of the South Bohemian County it will connect to the Central Bohemian section of motorway D3.

The motorway section has a length of 6.8 km and comprises, among other things, seven bridges and three overpasses. The dominating bridge structure is the 230-m-long Siebenfeld Elevated Highway Bridge crossing the valley of the Rzavá Creek. The project also included the construction of more than 7.8 km of sewers, the laying of 12.8 km of cables and the placing of 90,000 t of bituminous mix. The contract for the construction of this road section, which was awarded by the Roads and Motorways Directorate of the Czech Republic, is worth about EUR 111 mn.

CONTACT: **Mr. Pavel Žákovský, Transportation Infrastructures Directorate Czech Republic/Slovakia South**

Seven bridges and three flyovers had to be built, as well.

Top: Mirek Topolánek opening the section.

R4

GORDIAN KNOT DISENTANGLED

In order to improve traffic safety, the junction of highway R4 with the I/20 was reconstructed. The main objective was to provide for a greater transparency and more clearness for all road users.

Some 100 km south of Prague, in Southern Bohemia, there lies the tranquil town of Písek. One of its landmarks is the Czech Republic's oldest stone bridge dating back to the 13th century. This bridge is, thus, even older than Prague's famous Charles Bridge. The town's small population of just about 30,000 distracts from the fact that two of the Czech Republic's most important long-distance roads meet nearby. These are the route of the R4, connecting Prague with Strakonice, and road I/20, which leads from Písek to Blatná. In September 2005, a building consortium led by Transportation Infrastructures Directorate Czech Republic/Slovakia South embarked on the reconstruction of this dangerous junction.

The main route towards Prague – Písek is constructed as a four-lane divided expressway (two lanes in each direction), which continues towards Písek as the four-lane divided highway I/20. The connecting sections of roads I/4 and I/20, which provide access to the existing road network, are constructed as two-lane roads. For the large intersection structure, a total of 325,000 m³ of earth had to be moved. In September 2008, the junction will be completed after a construction time of 36 months.

PLACED ON RAMPS

No less than five ramps were built for the multi-level intersection. The total length of the roads and road links built, amounts to 8.1 km. Also part of the project are six bridges.

Ramp A for the Strakonice – Prague direction is a two-lane facility of a length of 1,000 m, ramp B for the Prague – Strakonice direction has also got two lanes and a length of 590 m, ramp C for the Písek – Blatná direction is an 800 m long two-lane structure, and ramp D for the Blatná – Písek direction has got just one lane and is 490 m long. An additional ramp E links the roads I/4 and I/20 and is connected to them by way of level turnoffs.

CONTACT: **Mr. Petr Čechal jr., Transportation Infrastructures Directorate Czech Republic/Slovakia South**

The Gordian knot of the R4.

BRIDGE CONSTRUCTION

A PROBLEM SOLVED: WITH THE HELP OF A TEMPORARY BRIDGE

Bridges are infrastructural hubs. Often, repair work on such structures impairs mobility tremendously. In the Polish town of Chełmno, this problem was solved with a temporary bridge used during the renovation.

The Polish word “Chełmno” originates from the word “Chełm”, which in English would be helmet or hill, describing the hilly landscape around the city at the Vistula River. Having been situated in the area of tension between the mainly Protestant Germans and the Catholic Polish since the day it was founded, the town can look back on a history full of vicissitudes. Meanwhile, the income of the town‘s population of approximately 21,000 comes mainly from furniture production, machine building, and, last but not least, from tourism.

TO ENSURE MOBILITY

Near Chełmno, a bridge connects the two banks of the Vistula River. This structure dates back to the early 1960s and was in dire need of renovation. However, since this bridge is the only one in the greater vicinity, it was of utmost importance that the traffic was kept flowing.

Hence, the problem in rehabilitating this bridge over the Vistula River was how to ensure mobility during repair work. The solution was to install a temporary bridge for the time of construction.

Transportation Infrastructures Directorate Bridges was awarded this contract by the Directorate General for Federal Roads and Motorways, Department Bydgoszcz.

“We were not only in charge of constructing the temporary bridge but had to carry out the repair work on the existing permanent bridge, as well,” explains Mr. Zbigniew Szubski, project manager with Transportation Infrastructures Directorate Bridges Poland. Work took from October 2006 to January 2008.

The temporary bridge is being built.

The new bridge is taking shape.

TO KEEP THE TRAFFIC FLOWING

The temporary bridge was mounted on a steel foundation. The bridge was 1,134 m long and 8.24 m wide, with a 6-m wide roadway. Among other things, the embankments and access roads for the bridge had to be built, and these structures had to be eliminated again by the Directorate after the reopening of the reconstructed permanent bridge. In addition, the contract included rust proofing and maintenance work on the steel structure of the temporary bridge.

THE NEW BRIDGE OVER THE VISTULA RIVER

Between April and November 2007, the permanent bridge was reconstructed. For this purpose, the bridge was unrigged and dismantled, the steel bay of the bridge secured, and a new bridge structure built.

The new bridge is 1,063 m long and 13.56 m wide, with a 9-m-wide roadway and 1.5-m-wide sidewalks on both sides.

15 steel bays were lifted, and new, tight dilatation joints, so-called movement joints, installed. These joints allow for the movement of adjoining construction elements, and, for example, accommodate expansion due to heat in summertime and contraction due to low temperatures in the winter.

Also part of the contract was the construction of new curbs, walkways, barriers, and balustrades. In addition, the repair work included rust-proofing of the steel structure and the concrete area, renewal of the street lighting and electrical installations, and rehabilitation of the access roads.

CONTACT: **Mr. Zbigniew Szubski,**
Transportation Infrastructures Directorate Bridges Poland

The permanent bridge is based on a solid footing

NEW HEADQUARTERS

FOUNDATION STONE LAID

At present, all offices of the various units of STRABAG have different addresses in Warsaw. The dynamic development in Poland and lack of space made a move urgently necessary. It was thus decided to build a new office complex, which, aside from all the Warsaw-based Directorates, shall also become the new home of BRVZ.

Old structures had to make way for the new headquarters.

The community of Pruszkow, located just a few kilometers southwest of the Polish capital, was chosen as the new company address. On 10 December 2007, the foundation stone laying ceremony for the new building was held. The new headquarters shall be opened in 2011. That the chosen location is a good one is proven by the fact alone that BMTI and TPA have already set up business in the immediate neighborhood.

The foundation stone laying ceremony was attended by a great number of guests, among them members of the plant management, the mayor of the municipality of Pruszkow, representatives of the local government, and the architects of the new building. Yet, the day not only marked the foundation stone laying for the new building but also the tearing down of the old structures that had stood on the chosen premises. Hence, a double signal for a new beginning.

At present, the first construction phase, comprising three buildings, is in its beginnings. The new headquarters will provide a total area of about 9,800 m² and a cubature of approximately 23,270 m³. The new building was designed by architects Florian Molzbichler and Sebastian Haselsteiner. Building and Construction Engineering Directorate Poland is in charge of constructing the new complex.

CONTACT: **Mr. Marko Mihajić,**
Building and Construction Engineering Directorate Poland

Laying of the foundation stone for the new building.

LIBYA

INFRASTRUCTURE FOR A COUNTRY ON THE UPSWING

Since the trade embargo on Libya was relaxed in 2004, the interest of foreign investors in this country has been growing. With its ports, like those of Bengazi and Tripoli, for instance, it is particularly the country's coastal region that has been developing swiftly. The infrastructure necessary for the upswing is built i.a. by STRABAG International GmbH.

The Coastal Road connects some of Libya's most important coastal cities. STRABAG International GmbH is a member of the consortium, which has been contracted by the "General People's Committee for Communication & Transport Roads & Bridges" to construct two sections of the structure. One section connects Misratah and Sirte and the other one Ajdabiya, Bengazi, and Al Marj.

Misratah is the third-largest city of Libya, after Tripoli and Bengazi. Over the last years, this city with a population of more than 400,000, has developed into an economic hub and is the starting point of the road to Sirte. Work on this section will take 21 months and will not be finished before June 2009. The one lane per direction road has a total length of 210 km.

The second section of the "Maintenance of Coastal Road" project connects the economic centers Ajdabiya, Bengazi, and Al Marj. After completion of the section at the end of 2008, 206 km of road with two lanes per direction and some 20 km of road with one lane per direction will have been constructed. Earthwork for this section alone required the moving of 287,200 m³ of soil. An investment volume of nearly EUR 40 mn is planned for these two sections of a total length of about 434 km.

CONTACT: **Mr. Michael Webster,**
STRABAG International GmbH, Cologne

A 434 km long road is being built between Ajdabiya and Al Marj.

Top: Rolling asphalt on the road connecting Ajdabiya and Al Marj.

The adventure pool at Westside.

LEISURE AND SHOPPING CENTER

WESTSIDE – A VISION TURNS REALITY

The shell of star architect Daniel Libeskind's first building in Switzerland, namely Leisure and Shopping Center Westside in Bern-Brünnen, is finished. The building consortium TU Westside, consisting of STRABAG AG and Rhomberg Bau AG, in which the Building and Construction Engineering Directorate Switzerland holds a major share, was chosen as total contractor. Last fall, some 600 members of the construction team attended the topping-out ceremony.

Seven months prior to its opening, Leisure and Shopping Center Westside in Bern-Brünnen is a finished structure. "Westside is an exciting 21st century community. It dramatically reinvents the concept of shopping, entertainment, wellness and living," says Daniel Libeskind. The American star architect designed the Westside shopping mall to replicate a medieval town, yet adapted to 21st century needs, with a mix of low and high-ceiling rooms, alleys and plazas, accentuated by the daylight falling in from above. Located

Topping-out shall bring good luck to the building.

Large-scale construction site in Bern-Brünnen.

over the motorway, Westside creates an exciting gateway into the city of Bern. In a natural way, the layered wooden façade connects Westside with the countryside to the west.

IMPRESSIVE FIGURES

The inclined concrete walls and the crystals made of glass and metal designed by Libeskind, meant a big challenge as to statics for the workers and construction businesses involved in the project. Also worth mentioning is the amount of material used since the laying of the foundation stone back in April 2006: some 85,000 m³ of concrete, 120,000 m³ of gravel, 11,000 t of steel, 5,000 m² of glass, and 3,500 m³ of wood, plus 350 km of power cables, and 200 km of pipes. Every day, between 400 and 600 workers were on the construction site during shell construction, and during interior finishing according to the tenants' requirements which will start in April 2008 there will be up to 1,500 people working on site. "Thanks to the outstanding and tireless commitment of all parties, we are on schedule," says a delighted Mr. Anton Gäumann, CEO of Neue Brünnen AG and Westside general project manager, and adds, "We are determined to successfully complete and open Westside on 8 October 2008."

FOR LEISURE, SHOPPING, LIVING, AND WORKING

Westside will comprise a shopping center with some 60 shops, a food court with several restaurants and bars, an 11-screen multiplex cinema, a hotel with conference facilities, an adventure pool and fitness center, and a senior citizens residence.

Owing to the new BLS rapid transit line station and the connection to the municipal Bernmobil tramway and bus network, Westside is excellently accessible by public transport, and due to direct access from motorway A1, Westside can also be easily reached by car.

Over the next five years, a total of approximately EUR 740 mn shall be invested in the Bern-Brünnen district of the city of Bern. The Westside Leisure and Shopping Center is at the heart of the new district, and with an investment volume of EUR 308 mn it is the largest single private project. The owner of Westside is Neue Brünnen AG, a wholly-owned subsidiary of the Migros Aare cooperative. Westside will bring nearly 800 new jobs to the region. Other investors will create dwelling space for about 2,700 people on 21 building lots.

CONTACT: **Mr. Bernd Hofer,**
building consortium "TU Westside"

85,000 m³ of enclosed space are being created.

The new production facility for the SEFAR Group.

ROMANIA

NEW PRODUCTION FACILITY FOR SEFAR

Romania will provide a vast range of opportunities for construction experts of all kinds for many many years. The country's construction sector has reported annual growth figures of 30 per cent for several years. Owing to the enormous investments, the excess demand for projects in building engineering, construction engineering, and transportation infrastructure development results in a strong demand in all fields of the industry.

In Romania, a good knowledge of the market and checking out of the construction partners is even more vital than it is in other European construction markets. In planning, it is advisable not to aim at the lowest possible price but to rather opt for the best-possible combination of all factors, from building material manufacturing, via a qualified and motivated staff, to quality and cost control and schedule compliance. "In short: It is necessary to secure a professional construction management with a reliable partner, who has experience in the country," explains Mr. Gerd Maurer, managing director of Züblin Construct SRL in Bucharest.

The SEFAR Group, too, has noticed the fact that Romania is a country on the upswing. This group develops, produces, and distributes technical fabrics for screen printing and filtration solutions and is one of the world's leading businesses in this industry. SEFAR has a staff of 1,800 worldwide. Züblin Construct SRL in Romania has been appointed general contractor for the turnkey construction of SEFAR's new production facility in Sighisoara.

TOP-QUALITY CONSTRUCTION

The new plant of the SEFAR Group, a greenfield investment, will have a floor area of approximately 13,500 m². The planned investment volume is roughly EUR 6.7 mn.

Aside from Züblin Construct SRL, Directorate Stuttgart/Komplettbau was also involved in the project. All shell work was done on own account. "Finishing the shell on own account contributes considerably to cost security as well as to the improvement and safeguarding of construction quality," explains Mr. Maurer. The greater vertical integration connected therewith, also allows for a higher net product. This also comprises own building material manufacturing, like e.g. that of concrete and asphalt, in own plants and with adequate quality control. "One key to our success is the fact that our project team consists mainly of local people," says Maurer.

CONTACT: **Mr. Gerd Maurer,**
Building and Construction Engineering Division Europe, East

Top: The new building has a floor area of 13,500 m².
Bottom: Gerd Maurer (front) at the inauguration ceremony.

The new location provides ample space.

Fast Construction Progress: Almost exactly one year after the award of contract, the plant could be handed over to the Swiss group in a ceremonious event in 2007. Also within this year, Züblin Construct SRL delivered the entire permit and execution planning.

Already three months prior to handing over, a machine test run was started, so that on the day of factory acceptance testing, the plant was already running a continuous two shift operation.

With the new plant in Romania, the Filtration Division of SEFAR has won a competitive location for the large-scale production of process filtration fabrics. At present, in its first phase of operation, the Sighisoara plant has a staff of 60.

Anna Mosnitzka from Hungary, 9 years

Kamil Kielarski from Poland, 4 years

Nick Stoffers from Germany, 7 years

CHILDREN'S PAINTING COMPETITION

AND THE WINNER IS ...

Dear children, we are **mightily impressed!** You did a wonderful job! Never before did we have such a great response to one of our competitions. We received some **150 paintings** of most diverse subjects and techniques. For this we want to **thank you** all very much! We hope you enjoyed painting as much as we did looking at your works. It was so difficult for us to choose a winner, that in the end we decided **by drawing lots.** Here, you can have a look at the three winning pictures and a small selection of the other pictures we received. And, as promised, there are **no losers.** Every participant receives **a small present.**

External ombudsman: Mr. Erhard Grossnigg

QUESTIONNAIRE ERHARD GROSSNIGG

What can you say about your job as the STRABAG Group's external ombudsman?
I regard it as a very demanding task.

What was your motivation behind your decision to assume this function?
I accepted it because of my many years of close association with STRABAG and because of my knowledge of the company.

In what cases may people turn to you?
In all cases of assumed or suspected violation of provisions of the Code of Ethics.

Who may contact you in connection with the Code of Ethics?
Anybody, no matter if from inside or outside the Group.

How do you deal with the information you receive, and what happens to this information?
All information I receive is kept strictly confidential, and the informants remain anonymous. The circumstances of the case will be looked into, and we will take action depending on the outcome.

What do you understand by the notion of "atmosphere of constructive debate"?
To tolerate everybody's opinion but to still take up a position in a matter-of-fact way and discuss the pros & cons.

Do you think that such an atmosphere is desirable for a company like STRABAG? If yes, why?
At any rate, for it is the richness of opinions that helps us find the right way.

How would you describe yourself?
Interested, loyal, straightforward, sometimes impatient

What values do you believe in?
Conservative ones: "love, faith, hope" .....

What is your motto of life?
"I WANT" can move mountains.

CONTACT: **efg@efg.co.at**

In an international business approach like that of STRABAG, it is crucial for success that our business partners put the necessary confidence in us. Yet, a prerequisite for such confidence is that all players comply with legal stipulations and internal guidelines and are aware of and adhere to basic ethical values. To provide for neutral contact points in the case of possible violations thereto, an internal and an external ombudsman have been appointed. The ombudsperson system of STRABAG is diversified according to regional criteria. Central contact is Mr. Karlheinz Mahler, Head of the Human Resources Development Directorate. In the large STRABAG countries he is assisted in his work by regional ombudspersons. To find your contact person please look into the STRANET or ask Mr. Mahler. Additionally, there is an external ombudsman, Mr. Erhard Grossnigg, available for anonymous reports.

CONTACT: **Mr. Karlheinz Mahler, Human Resources Development**

Internal ombudsmann: Mr. Karlheinz Mahler

QUESTIONNAIRE KARLHEINZ MAHLER

What can you say about your job as the STRABAG Group's internal ombudsman?
More often than not, this task requires mediator skills, i.e. one has to be able to listen to the arguments of all parties in an unjudgmental way and to show how to solve the problem without taking up a position. On the other hand, the job often is a rather investigative one, e.g. when you have to get to the bottom of the reasons for an accusation, check whether an allegation is true, or clarify a matter in an objective way. The ombudsman often serves as a kind of catalyzer in finding common ground in a situation of conflicting interests.

What was your motivation behind your decision to assume this function?
I believe that this function is an important "hygienic factor" in a business environment. Owing to my legal training, I am used to dealing with interpersonal or even criminal issues.

In what cases may people turn to you?
One should feel really "burdened" or be able to reveal a third party's violation of legal stipulations or company guidelines, or an offence against common decency. However, the first step should always be to contact a confidant in the closer office environment, like for example a superior or the labor representative in charge.

Who may contact you in connection with the Code of Ethics?
Anyone feeling discriminated against or burdened in any other way or wanting to point out violations of the provisions, guidelines, or basic ethical values laid down in the Code of Ethics.

How do you deal with the information you receive, and what happens to this information?
When dealing with interpersonal issues, it is hardly ever possible for the complainant to remain anonymous, for such issues can only be solved by getting together and discussing them. In the case of alleged criminal offences, the informant may of course, if so desired, remain anonymous. However, in some cases, the clearing up of a crime and criminal prosecution will only be possible if the informant can be called to witness. Yet, this will only happen with the informant's express and prior consent.

What do you understand by the notion of "atmosphere of constructive debate"?
A fair and joint struggle for viewpoints on a matter-of-fact level while, at the same time, a sustainable compromise is being looked for, or in other words, to debate things without personally attacking or even harming the conflict partner.

Do you think that such an atmosphere is desirable for a company like STRABAG? If yes, why?
Conflicts between individual persons and groups in companies are unavoidable and should be regarded as completely normal. However, such conflicts or debates require a certain "culture" or constructive atmosphere. If handled in the way described above, conflicts open a chance to develop new and innovative ideas. At the same time, it is a display of interpersonal appreciation to not deny somebody's conflicting viewpoint and to have the right to express such viewpoint.

How would you describe yourself?
I am a rather quiet and reserved person, and do not need to push myself to the fore. What is important to me is family, true friendship, and a harmonious working environment.

What values do you believe in?
What I regard as indispensable is the observance of fairness, social responsibility, and sustainability in politics and business. Discipline, honesty, reliability, and loyalty are values I consider vital for a functioning coexistence in job and business life.

What is your motto of life?
Semper prorsus, numquam retrorsus (Always forward, never backward.)

CONTACT: **karlheinz.mahler@bauholding.com**

STONE PAVING

FOR VIENNA'S BEAUTY

Beautiful squares put beautiful buildings into the spotlight. Architectural design, location, and an exact finish are of top priority. The Stone Pavement Group of Transportation Infrastructures Directorate Vienna / Lower Austria / Burgenland participated in creating some of Vienna's most attractive squares.

8,000 m² of beauty in Laxenburg.

Civil engineer and master pavement layer Mr. Franz Grammel has been working for the STRABAG Group for 18 years. His team of 60, the Stone Pavement Group, consists of creative engineers, foremen, and skilled workers with the required expert knowledge. They are well-trained stone pavement layers, who are used to developing and implementing attractively designed high-quality solutions for everything from single-family homes to large public squares.

LARGE FORMAT FOR THE PALACE

Every year, more than two million people come to visit Schönbrunn Palace. On their way to the palace they pass the newly-designed square in front of the main gate. Where there used to be a parking lot, a large rectangular square has been providing for an unobstructed view of Vienna's most popular landmark for about two years. All the paving was done by the Stone Pavement Group of Transportation Infrastructures Directorate Vienna / Lower Austria / Burgenland. "For this square we used large-format slabs weighing up to 300 kg which were laid with the help of vacuum technology," remembers Mr. Grammel. These large-sized slabs are surrounded by small-format natural paving material.

CHANGE OF SCENE – THE VIENNA PARLIAMENT BUILDING

At another Viennese landmark, the Parliament Building, the expert pavers produced a masterpiece in terms of logistics. Here, the square around the Pallas Athena statue and the ramp were paved in the summer of 2005. For this, a whole range of stones were used – from small stone and normal large-sized stone, all the way to large-format granite slabs. Because of the tight construction schedule, many things had to be done simultaneously. This was a special challenge for construction logistics.

LAXENBURG – A PLACE FOR RECREATION

One of the most popular recreational destinations in the Vienna vicinity is the Lower Austrian community of Laxenburg, located some 20 km south of Vienna. Every year, thousands of people visit the park of the former summer palace of the Habsburg family. For a long time, the large square around town hall, church, and palace was used solely for parking. Now, the square has been completely rehabilitated and shall, in the future, be the venue for farmers' markets and events. Some 8,000 m² of large-size granite paving slabs were placed loosely with natural joints. Architect Podrecca designed the herringbone pavement pattern, which is extremely difficult to pave, since stone sizes and formats vary all the time.

CONTACT: **Mr. Franz Grammel, Transportation Infrastructures Directorate Vienna/Lower Austria/Burgenland**

STRABAG

PHOTO CONTEST 2008

"Safety" is the No. 1 priority on STRABAG construction sites. Be it in transportation infrastructure development, building or construction engineering, the high safety standards of STRABAG come first in every project. The editorial team of inform now wants to underline these standards with photos of emotional strength taken on our construction sites. For this, we need your help. Show us with your photos, how you and your team contribute to the safety on the construction site.

Eligible to take part:
All staff members of the STRABAG Group.

Photo entries:
In color, either digital (as jpg or tif-files with the highest-possible resolution) or prints or slides.

Entry deadline:
13 June 2008

Contact:
Bernd.hinrichs@strabag.com

The editorial team is looking forward to receiving many entries!

The best photographs will be presented in the next issue of inform. Join in and win! The first prize is a restaurant voucher worth EUR 200!

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