

**SCHNABEL AG**


informations for clients and  
partners of SCHNABEL AG

# Editorial

## In Times of Economic Crisis

Dear readers,

at the present time the word "crisis" has negative connotations – but this word also offers the opportunity for change. Futurologist Lincoln Steffens expressed it aptly: "I have seen the future. And it works." In keeping with this motto,

we're sending out positive signals and strengthening our teams in Germany and India so that we're ready to face the challenges ahead. We highlight the significance of the "positive crisis" in our lead story "In Times of Economic Crisis", using the example of the Dubai business location. The global economic crisis has changed the framework conditions under which companies operate. Which lessons has the crisis taught us and how can we apply them? We also present a selection of interesting projects and tell you something about their technical implementation: data centre conversions for Berlin's Technische Universität and Freie Universität funded by Germany's Economic Stimulus Package #2. A new data centre building for meteorology, environment and climate monitoring. The technical infrastructure for FC Augsburg's stadium, including floodlighting, audio and video technology. And finally, we look back on the four years in which we were responsible for planning and site supervision for the complete redevelopment of Section C of Munich's law court complex.

We hope you find this edition interesting and that you gain some positive new perspectives on the subject of crisis.

Sincerely,



Berthold Birkelbach

Every crisis offers opportunities – and major crises offer major opportunities. So in this edition of FLASH we take a closer look at Dubai, the SCHNABEL business location which has been most affected by the changes the crisis has brought.

The global economic crisis has hit Dubai hard: "The Palm", the palm-shaped island, has been left virtually empty, construction work has stopped on the "Burj", which is set to become the tallest building in the world when completed, and all activity has currently ceased on "The World", another artificial island project.

The collapse of Dubai as an international financial centre has meant that virtually all activity in the construction sector has come to a halt. Guest construction workers from abroad have been leaving the country in droves. If foreign citizens working in the United Arab Emirates (UAE) lose their jobs, they are obliged to leave the country within a month.

In Dubai things are a little quieter these days: the shopping malls are empty most of the time, there is not a single car left in the large automobile showrooms which line the road to the airport, many properties are vacant and numerous organizations have pulled out of Dubai. Dubai's population is expected to shrink by a further 8 to 17 per cent. The latest reports on the impending insolvency of the emirate offer dramatic confirmation of this negative trend. Our clients want to know how SCHNABEL AG is facing the economic crisis in Dubai. In reply, we would state that our starting position is a positive one, considering that, since the launch of our Dubai operation in 2005, we have become the leading data centre planners in the Middle East and have expanded our range of services in line with SCHNABEL AG's overall strategy.

Within the context of Dubai's multicultural environment, we have put together a truly international team. This means that we are particularly well positioned to meet the demands of the international market. In addition, we offer our clients cross-industry solutions. We always provide tailor-made concepts, individually designed to meet the diverse requirements of our customers. In Dubai, too, we have successfully demonstrated our competence in this area. Despite the economic crisis, the number of international project requests is steadily growing – SCHNABEL AG's global business is becoming increasingly significant. And our Dubai team members play a key role here, thanks to their international project experience and multifaceted cultural competence. Our Dubai personnel, just like our German engineers, all have first-class technical backgrounds which cover the whole spectrum of SCHNABEL AG's services. If necessary, the team in the UAE receives support from our Indian subsidiary SCHNABEL Data Center Consultants Prv. Ltd. And in the Indian market, too, the SCHNABEL brand has established itself as a specialist provider of real-estate-related engineering services.

Up until the outbreak of the crisis, the clients of our Dubai branch consisted mainly of local enterprises and organisations. Since then, our sphere of action has shifted focus to embrace the neighbouring countries. Our internationally oriented "task force" in Dubai is no longer concentrating on the Middle East alone, but is now serving regions such as Central Africa and the Near East where several new projects are already successfully under way. We are convinced that our German and international clientele will profit from the expansion of our regional service spectrum and that we'll remain true to our motto: "Nobody does it better" in the years to come.

# We're Making Fair Weather

**SCHNABEL AG designs electrical infrastructure for the new EUMETSAT data centre building which operates a fleet of meteorological satellites for weather, environment and climate monitoring.**

Everyone does it: you watch the weather forecast on TV to find out if your picnic will be a wash-out or if glorious, sunny weather will make it a resounding success. Weather forecasts rely on a whole variety of meteorological data if they are to be reliable. EUMETSAT, the European meteorological satellite systems operators make this information on weather, climate and the environment available to the meteorological services of the 30 European EUMETSAT member states. Amongst other things, this data is used for weather forecasting.

An extremely reliable technical-operational infrastructure is called for in order to guarantee that this information remains available non-stop, 24 hours a day, 365 days a year. And that is why EUMETSAT is planning a new operational data centre with a total floorspace of 3400m<sup>2</sup> at its Darmstadt headquarters, for the currently operational satellites as well as future satellite generations already sanctioned by the EUMETSAT council. Energy efficiency and environmental protection considerations have been given high priority in the design of this project. The building will have five storeys plus a base-

ment level and is due to become operational in 2011. The overall costs for the initial construction of building and infrastructure amount to approx. 10 million Euros.

EUMETSAT operates various different satellite systems. The second generation of Meteosat satellites fly in geostationary orbit at an altitude of about 36 000 km over the equator and provide data every 15 minutes via 12 channels. Metop-A, which has been in service since 2007, is a polar orbiting satellite flying at an altitude of about 850 km over the two poles, and can observe smaller sections of the Earth at significantly higher resolutions, and the Jason-2 satellite monitors the sea level and provides data on the topography of the ocean's surface. The design and construction of the third generation of Meteosat satellites, MTC, and other advanced satellite systems for meteorology, climate and environment monitoring is currently at the development stage. The first launches of these new satellite systems are scheduled to commence in 2014. In future, the EUMETSAT member states and six further cooperating states will be able to use this data for their local conditions.

SCHNABEL AG has been commissioned to provide complete electrical design services for this fascinating new-build development. Our service package comprises a complete Tier IV power supply for the data centre. This includes redundant MV power feeds from different substations, UPS and back-up power in full 2(n+1) configuration. All project components will be completed as individual modules. Security is also high: biometrical access controls in and around the facility, fire alarm technology with very early detection, video surveillance and security systems: all these will make the new EUMETSAT data centre a high security facility with round-the-clock maximum protection.

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# We're Lighting Up the Impulsarena

PKA Karnasch has designed the building service systems for FC Augsburg: floodlighting, public address system and video walls.



PKA Karnasch has designed the technical infrastructure for yet another stadium: the Impulsarena in Augsburg which opened in August of this year.

This was familiar ground for engineering consultants PKA Karnasch, a SCHNABEL subsidiary, but every project is a new and fascinating experience, and Impuls GmbH's recently completed arena for second division soccer club FC Augsburg was no exception. Hbm Stadien und Sportstättenbau GmbH asked PKA to provide design and site supervision services for the power systems (high and low voltage) and conveyor technology.

The project reached its crucial final phase in spring of 2009, and on July 26th 2009 the long-awaited new arena was officially inaugurated. On August 16th the Augsburg fans were

able to cheer their team in their new stadium for the first time at the 2:2 match against Rot-Weiss Oberhausen. The stadium can accommodate up to 30 660 sports fans, (19 060 seats and 11 034 standing places). This includes 52 corporate boxes with a total of 520 seats and 46 barrier-free wheelchair spaces. The project's investment volume amounted to approx. 43 million Euros.

For this stadium construction project, the PKA team was responsible for the design and construction of the complete lighting system as well as the installation of the stadium floodlighting. All installations were carried out in accordance with FIFA regulations. The flood light system comprises a total of 180 floodlights drawing a total of 400kW. The PA system for the main building and terraces was another of PKA's responsibilities and was in-

stalled in compliance with VDE norm 0828 and 0833 T4. The loudspeaker system on the terraces has an output of 80 000 watts.

In addition to the above services, the contract also included design and site supervision of the fire alarm system in compliance with VDE norm 0833 T2, the cell emergency call system for the police facility, video surveillance systems inside the stadium and in the promenades, the data and telecommunication network to meet cabling path class E standards, two 30m<sup>2</sup> video walls, a containerized 825 kVA back-up power system, MV and LV switchgear and two 1600 kVA transformers.

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# We're Modernizing Two University Data Centres

SCHNABEL'S Berlin branch appointed to design DC redevelopments at the TU and FU



Berlin's Technische Universität (TU) and Freie Universität (FU) are two mutually independent institutions. Both find themselves in the position of having to rebuild or extend their respective data centres, both have received funding for their projects from Germany's Economic Stimulus Package #2, and both have appointed SCHNABEL AG to implement these projects.

The infrastructure of the TU's Berlin data centre has seen better days and is now in urgent need of renewal. Energy efficiency and Green IT are the key guiding concepts for this project. The objective here is that the refurbished DC will qualify for TÜViT Level 2 certification. One particular challenge will be to carry out the entire and very complex rebuild

project while maintaining full facility operation. So that the project is tailored to meet the client's requirements as closely as possible, SCHNABEL AG has produced two studies. The first contains the technological options and a basic conceptual plan with different alternatives. The second is a feasibility study for the preferred alternative which analyses critical rebuild scenarios in terms of structural procedures during facility operation and examines structural requirements. Work on these studies began in May 2009 and the detailed design work for all project components (architecture, support structure, electrical systems, security, building services, instrumentation and control, building control technology) is now in full swing. The first construction stage is due to be completed at the end of

2010. The FU Berlin has also decided to renew its data centre which is now almost 30 years old (built in 1980). The cooling and air conditioning systems, in particular, are in urgent need of replacement. SCHNABEL AG have been asked to undertake the design and planning of this reconstruction project. Here too, the work will need to be carried out during full facility operation and will include cooling and HVAC systems with the related instrumentation and control, electrical and security technology. The first construction stage will be completed by the middle of 2010. In addition, SCHNABEL AG has produced a detailed study for the IT room which outlines optimum air distribution and efficient use of the new cooling supply system. The aim of this study was to develop a concept for ensuring reliable IT operations from the aspect of optimum airflow and energy conservation. Amongst other things, this included layout plans for server cabinets, cold aisle containment including coordination of air conditioning supply, adjustments to and inside the raised floors.

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# Planning in the Name of Justice

## Schnabel's Munich office designs building services for Munich's law court complex.

## Locations

### NATIONAL

- Berlin  
Contact: Mr. Carsten Zahn
- Essen  
Contact: Mr. Martin Niewiera
- Frankfurt  
Contact: Mr. Sven Krause  
Mr. Uwe Kress
- Hannover  
Contact: Mr. Frank Urban
- Heilbronn  
Contact: Mr. Mario Betros
- München  
Contact: Mr. Christoph Wegner  
Mr. Stevo Bilbija

### INTERNATIONAL

- Dubai (U.A.E)  
Contact: Mr. Damion Lock  
Mr. Ernst Monteiro
- Bangalore (India)  
Contact: Mrs. Shaheen Meeran

The Bavarian criminal justice centre in Munich was built in the early 1970s and inaugurated in 1974 after a two-year construction period. 18 years later, the first sections of the building were in need of renovation.

In 1992 the main challenge was to remove the asbestos from building sections A and B. This was such a large-scale task that it took eight years to complete. As part of this redevelopment project SCHNABEL AG designed and installed a category 7 data network. In 2001 a server room was constructed. For this project we designed a redundant cooling supply complete with security facilities which we saw through to completion. Between 2002 and 2003 SCHNABEL AG designed a comprehensive automatic fire alarm system for building sections A and B, as well as an electro-acoustic loud speaker system (ELA). This fire prevention installation had to be brought forward to improve personal and facility protection.

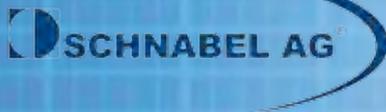
From the year 2002 design work was carried out for the complete restoration of section C of the building. The outdated fire-safety system and those parts of the building in which asbestos had been used presented potential hazards and no longer complied with modern building regulations. The renovation of section C was carried out between 2004 and 2008 during continuous administrative operations. To make this possible, the building's nine stories were completely renovated two at a time. During the four-year reconstruction phase, SCHNABEL AG undertook the design and site management for the following components (HOAI-Phase 2 8):

- replacement of the back-up power system
- installation of a photovoltaic power system

- replacement of the LV main distribution, LV distribution on the individual storeys and the entire LV power installation
- replacement of the lighting system including emergency lighting
- installation of a category 7 structured data and telephone network
- intrusion alarm system
- fire alarm system with sprinkler system activation
- electro-acoustic loud speaker system for evacuation purposes
- video surveillance
- escape door controls and monitoring

All work was completed in the second quarter of 2009. At present we are concentrating on the replacement of the MV switchgear in section B, which is scheduled to be finished in the first quarter of 2010. Another fire safety task which SCHNABEL AG is giving advanced priority is the upgrading of the automatic fire alarm system in sections A and B of the building to equip it with a direct connection to the Munich Fire Service. In addition we have been asked to provide automatic evacuation for parts of the building using the electro-acoustic system. The electrical infrastructure along some sections of the escape routes is being modified in order to reduce fire loads. These measures are due to be completed by the end of 2009.

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