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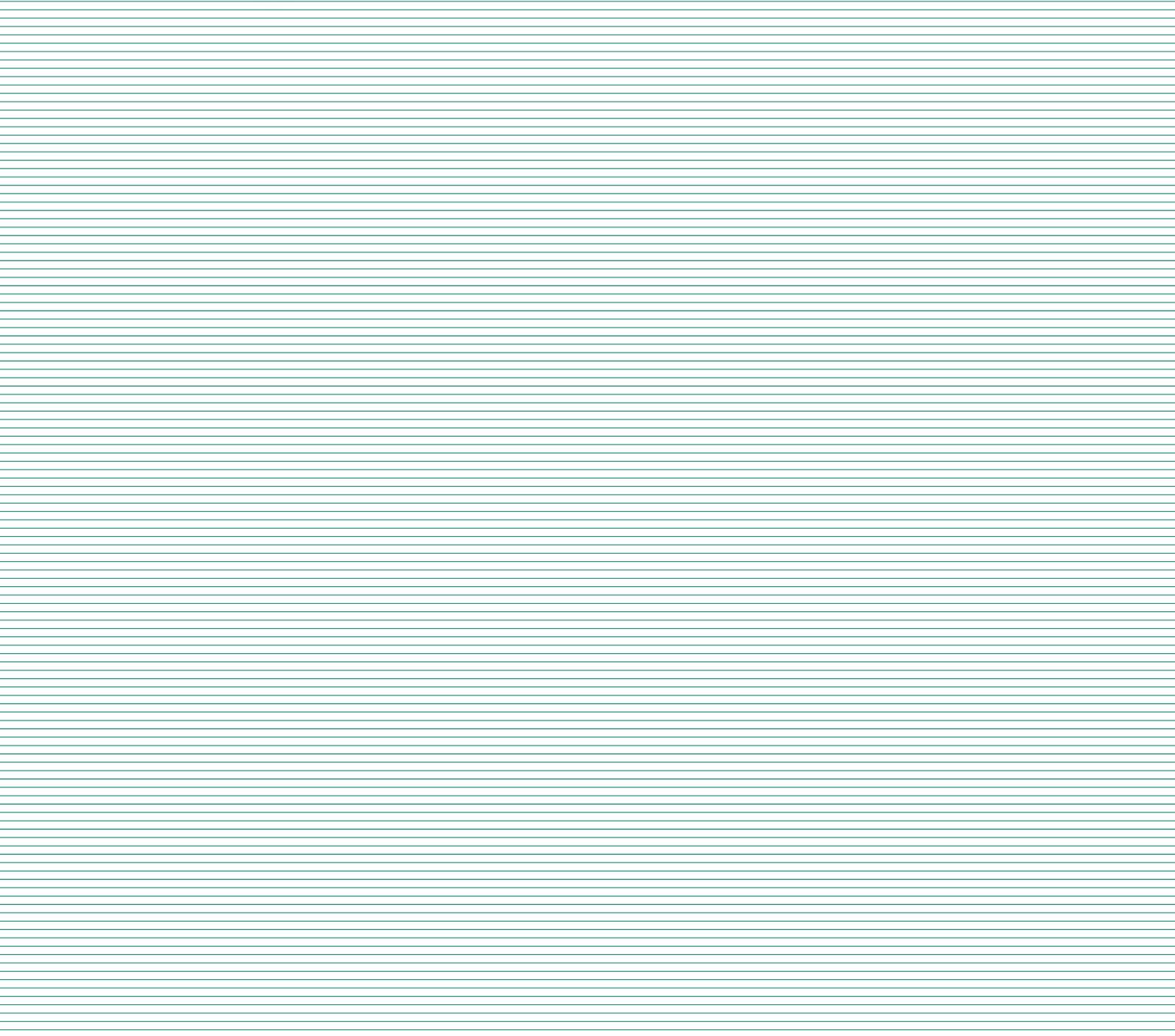
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# Arab-German Yearbook 2014

Construction and Consulting

# Special Topics





Al Sifah Holiday Resort, Oman

# German Engineering—Stability and Cost Optimization

## Professor Pfeifer and Partner German Engineering Consultancy

As engineers we are called upon to plan buildings that make a more efficient use of material and energy resources. We participate in integrated planning processes and welcome opportunities to incorporate the spirit of our company: commitment, excellence and economical design. We'd like to give you three examples—in Germany, Iraq and Oman—that answer this claim.

First we would like to refer to an optimized, unprecedented and absolutely innovative structure that was completed in 2013.

### Football Stadium Millerntor, Hamburg (Germany)

This roof covers the eastern end of the stadium over the seating and standing area for 8,350 people:

- a column-free covering of an area of 120 m x 37 m using a steel structure
- an innovative main supporting structure using four pyramids with circular hollow steel sections
- a newly developed load-bearing structure called "Antimetric Torsional Structure"

- a main truss girder spanning 120 m suspended from the torsional structure
- a secondary supporting structure with truss girders spanning 25 m and cantilevering by over 11 m

The entire construction uses extremely filigree double-T section and round pipes taking advantage of the ductile load reserves. It also uses prefabricated, welded subsystems connected on site using high-tensile bolts.

We provided the structural design, which means establishing the basis, the preliminary design, the final design, the approval documentation, the execution drawings, and the dynamic analysis.



Grandstand of the Millerntor Stadium in Hamburg-St. Pauli, Germany

## Al Sifah Marina, Muscat (Oman)

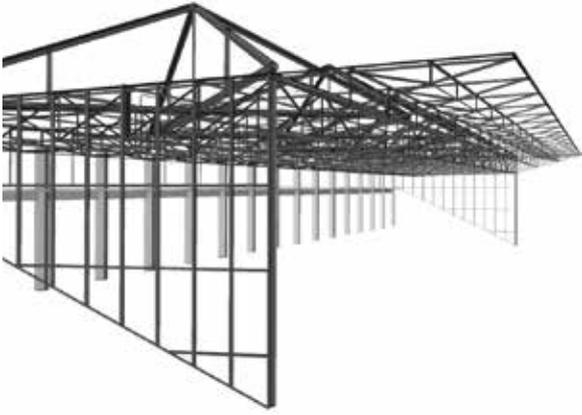
We have always been devoted to sophisticated and luxurious architecture like the holiday park near Muscat, the capital city of Oman. This new, appealing holiday resort consists of several new buildings, such as villas and a 5-star hotel built as solid structures. Our services included the review of the existing static documentations and complete redesign, value engineering with calculation models for masonry walling subjected to

seismic forces (earthquake zone II a) based on the International Building Code (IBC), and the optimization of the construction schedule.

Our clients will always be able to benefit from our implementation of value engineering with a reduction in building costs and building time.

Al Sifah Holiday Resort, Oman





Millerntor Stadium: Load-bearing structure of the roof and the side façade.

## Salah Al Din Olympic Stadium, Tikrit (Iraq)

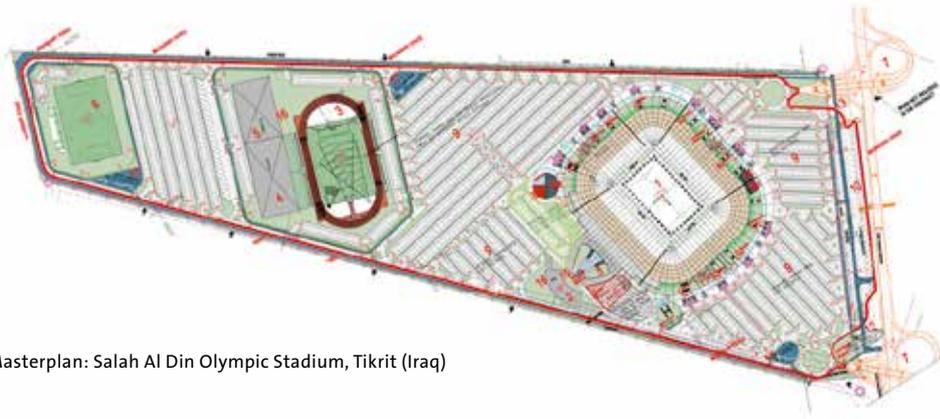
At the end of 2013, Professor Pfeifer and Partner was entrusted with a wide range of consultancy services for a new stadium in Iraq. This huge project is under the responsibilities of the local Ministry of Youth and Sports. The area for the Salah Al Din Olympic Stadium is close to the city of Tikrit in Iraq and has been designed as an integrated and modern complex for sports

and leisure, with all the possibilities for future expansion. The project includes the establishment of a main stadium with its peripheral elements including a second stadium, training stadium and a hotel on a plot of land 350,000 m<sup>2</sup> in size.

The main stadium has a capacity of 30,000 spectators. Its design and construction fully conforms to FIFA standards and has a roof providing full protection from rain and sunshine. The design has been particularly inspired by the architectural heritage of the city of Tikrit and in general by typical Iraqi architecture. The structure of the stadium has been designed in such a way that it can accommodate not only sporting events but also other entertainment events like concerts.

The scope of our work includes mainly the review of all design disciplines such as architecture, civil and structural engineering, mechanical and electronic engineering. This means in particular: comprehensive review of the project design, drawings and specifications that were prepared by the contractor according to recognized international practice, granting initial approvals and recommendations for the final approvals of all design documents as well as supervising the execution of the project on site.





Masterplan: Salah Al Din Olympic Stadium, Tikrit (Iraq)

## Our commitment

From initial feasibility studies to structural analysis and design services ProfessorPfeiferandPartner is committed to designing for efficiency and constructability. With our vast experience in both structural engineering and building construction, we are able to provide our clients with innovative designs that allow projects to be built in the best possible manner.

One of our greatest strengths is “value engineering”: As a highly-qualified German planning office this means offering tailor-made solutions from the very onset, which include strict cost optimization throughout the whole project. This we achieve by designing our own cleverly devised structural systems and conducting a series of comparative calculations as well as reviewing and evaluating existing static calculations. We use the very same methodology throughout our whole range of planning services, including architectural and landscape planning, civil and structural engineering, and mechanical and electronic engineering etc.

Our high-quality solutions for middle-sized and large projects have earned our clients’ respect for more than 25 years. Approximately 100 employees are working at several different sites, in Germany and in the Middle East.



Prof. Matthias Pfeifer  
Structural Engineer and  
University Professor  
Owner and Technical Director



Ute Pfeifer  
Qualified Architect  
Owner and Management Director

## Engagement in the Arab World

ProfessorPfeiferandPartner has been running an engineering office in Abu Dhabi (UAE) for many years and at the end of 2013 obtained the full license in Baghdad (Iraq).

The German-run Middle East team commands long-standing experience in all types of buildings and building materials. We find further support among our associated partners and within our comprehensive network to achieve results of excellence. In recent years, the team has executed projects in all categories in the UAE and various bordering states.

Such projects include: housing areas with mosques, shopping malls and recreational centers in port and industrial zones, groups of high-rise blocks, a car manufacturing plant, large infrastructure projects entailing road networks and bridges, hospitals, numerous ambitious houses, offices and administration buildings, large holiday parks, and extraordinary sports facilities.

With our branches in Abu Dhabi and Baghdad we transfer our sound expert knowledge and impeccable track record to the Middle East. Further projects in the region are in the pipeline and the team is looking forward to the up and coming interesting and challenging assignments.



Guido Noelle  
Civil Engineer  
General Manager for Middle East