Formwork Scaffolding Engineering
Issue 1 | 2009 Middle East

PERI®

scope

Successful construction with PERI

Dear readers,
Dear customers,

Every construction site is unique. Our challenge is to find the best solution for each project jointly with our customers: fast, comprehensive and safe. At nine locations in the Middle East, our Sales and Design Engineers offer expert support for the most effective construction progress, optimised use of standard equipment and the most reasonable overall costs to you.

The basis for these solutions is our broad product range with high quality systems and our engineering expertise. Having introduced our PERI UP scaffolding system, we are offering formwork and scaffolding solutions from one source – and, thus, a solution perfectly adjusted to the individual project requirements. However, we also ensure timely supply to the site thanks to our three rental park locations in the region. Our specialist staff guarantees fast delivery of the right rental equipment and a comprehensive site service.

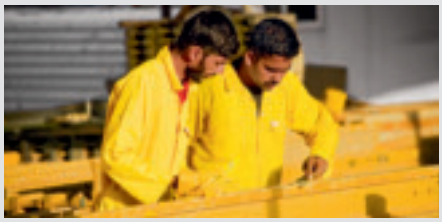
In this first edition of PERI scope Middle East, we show you selected sites in the region, including the Saadiyat Bridge in Abu Dhabi. PERI UP falsework was used to bear the high concreting loads when erecting the imposing, leaning pillars. Adjustability to complex geometries and the easy assembly of the system facilitated a cost-effective solution.

The diversity of the projects presented here and completed with our systems not only demonstrates the variety of our products. Far more, it also reveals our extensive experience, which we use to support our customers. This is our contribution to your success.

Alexander Schwörer
Managing Director PERI Group

On-site service – efficient stockyard locations with the world´s biggest stock of rental equipment

PERI stockyards in the United Arab Emirates, Saudi Arabia and Qatar



As an example, the PERI stockyard UAE is located centrally in Dubai in the Al Quoz area and, therefore, is easy to reach. The stockyard spreads over an area of nearly 40,000 m².

Subramanian PC,
Stockyard Manager
Dubai

The construction period is normally predetermined by the client and, "as time is money", is accordingly very tight. Construction project management is, therefore, under considerable pressure and must be supported by a reliable and capable partner. PERI has the world´s biggest stock of rental equipment – therefore we can supply our customers, reliably, fast and flexibly. In our local service centres, we provide the complete range of formwork services. One advantage of having large stockyards is that even major projects can be supplied with the required material within just a couple of days – obviously depending on the quantity.

Versatile component with many applications

GT 24 Formwork Girder

The GT 24 Formwork Girder is the main component for wall and slab formwork. Due to the high load-bearing capacity and rigidity of the GT 24 compared to other 20-cm high formwork girders, fewer girders, steel walers or props are required.

The GT 24 is
- strong for walls
- light and manageable for slabs
- cost-effective for customised formwork solutions.

GT 24 lattice girder - VT 20K solid web girder comparison.

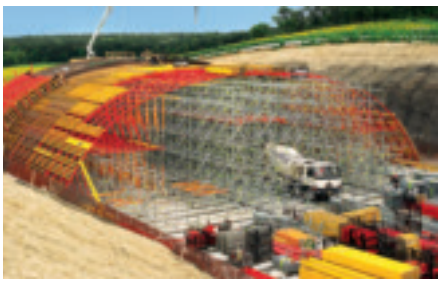
GT 24 5,9 kg/m	**± 0 %**
VT 20 5,9 kg/m	Weight
GT 24 28 kN	**+ 27 %**
VT 20 22 kN	Permissible support reaction
GT 24 7 kNm	**+ 40 %**
VT 20 5 kNm	Permissible blending moment
GT 24 800 kN/m²	**+ 86 %**
VT 20 429 kN/m²	Flexural strength

The struts penetrate the chords along the whole cross-section. There are practically no cavities which could trap water. The latticework design ensures that the GT 24 is well-ventilated when stacked.

The GT 24 enables durability due to the patented girder nodes with mini-dovetail jointing.

GT 24 for walls
VARIO GT 24, the wall formwork system with continuously adjustable element connections. Regardless whether it is industrial or residential construction, bridge abutments or retaining walls, every ground plan and any height up to 18 m can be formed.

GT 24 for slabs
MULTIFLEX on slab props. With the PERI MULTIPROP slab prop, the high permissible GT 24 support reaction of 28 kN can also be used at maximum extension lengths.



GT 24 for custom formwork
The GT 24 is also the right girder for custom solutions. Its higher load capacity than other formwork girders, means you need fewer components and support. This results in savings in labour costs with every use and on every construction site.

Technical know how and a mix of PERI systems lead to a successful progress

Central Market, Abu Dhabi, United Arab Emirates

Contractor
Arabian Construction Co., Abu Dhabi
Field Service
PERI Dubai

The columns in the podium area are formed with LICO, the lightweight column formwork. The advantage of LICO is that all elements can be moved by hand which saves time and the connecting parts are permanently attached to the panels which means they cannot get lost.

The Central Market Site has a great history: For over 40 years the original souk, which was known as a hub of trade and meeting point, was located there. The new Central Market was designed in such a way that this spirit can actually go on. The project consists of four high-rise buildings. There will be one tower with more than 72,000 m² office space, another tower will accommodate more than 450 appartments. A five and a four-star hotel will be located in the central market, as well as a retail podium with many shops. There will be more than 5,000 parking spaces and a shopping mall. Tower 2 as the major project will be the tallest tower in Abu Dhabi City with 90 floors and a height of 374 m. It requires very intensive cooperation between PERI's technical department and the contractor to find economical technical solutions for the different areas and to achieve the intended floor cycle of 5 days.

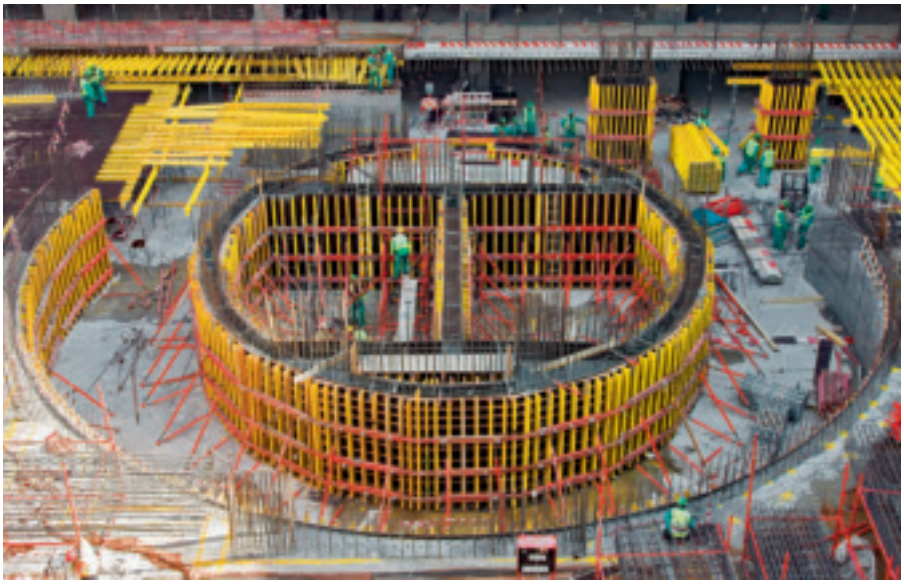
The slab heights in this project vary from 3 m to more than 20 m and the slab thicknesses differ as well. Therefore, the technical department decided in cooperation with the contractor to use a combination of MULTIFLEX, PD 8 and Tableforms so that the different requirements in the slabs could be fulfilled.

To ensure the required floor cycle time of 5 days is achieved, the shear walls were formed using the VARIO system in combination with the ACS Climbing system. By doing this, a lot of crane time is saved as no crane is needed to get the formwork from floor to floor 90 times.

Special requirements in the podium areas lead to the use of the PD 8 system to support the high slabs and SKS for the climbing of the single-sided walls. With the SKS 180 climbing system, the loads from the fresh concrete pressure are transferred through the brackets by means of V-strongbacks and compression braces into the scaffold anchors. Generous bracket spacings allow large-area formwork units with optimal utilisation of the bearing capacity. This leads to an extremely economical solution.

The shear walls in Tower 3 are formed with TRIO as fewer individual components are needed which leads to faster forming. VARIO GT 24 is used in several areas of the project. In some areas with the GT 24 girder and other areas using the VT girder. It is used for retaining walls, shear walls, small core walls and belt walls. The VARIO Column formwork is used in the podium, as well as in the towers.

George Khoury,
Engineering Manager:
"We found PERI very responsive in dealing with the technical issues and providing backup on site in relation to the same."



VARIO GT 24 is the wall formwork with continuously adjustable element connections for all designs and applications.

In the technical floors of the tower and in some parts of the podium area the CB Climbing is used. The CB 240 and CB 160 climbing scaffold systems are framework brackets for supporting large-area wall formwork. They guarantee simple handling, fast concreting cycles and problem-free adjustment to different wall configurations.

As this project needs good technical support and a reliable material supply – PERI was chosen to deliver the mix of the formwork solutions for the different areas. As the towers are very high the safety of the systems was also a reason for the contractor to choose PERI.

VARIO GT 24 solution to adapt the formwork to unusual corewall shape

Al Fattan Office Tower, Dubai, United Arab Emirates

Contractor
Sungwon
Field Service
PERI Dubai

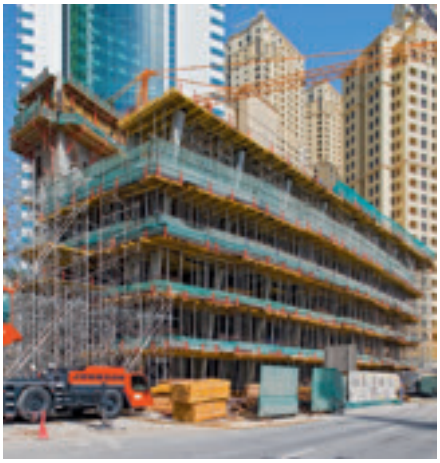
Mike Kim,
Project Manager:
"We chose to use PERI as we know it as the best and safest formwork system. We know that PERI has qualified engineers to support us immediately and in a co-operative way. At the Al Fattan Office Tower we have to install the 25 m high slab, for which PERI gave us a very easy and fast system solution. If you ask us "Do you want to use PERI again for the next project?", then I will say "Absolutely"."

The owner of the Al Fattan Towers, completed in 2006, decided to build an office tower as well,which is located directly in front of the existing twin towers and connects the buildings. The office tower, which is under construction at the moment, is going to be a multistorey building with 2 basement levels and 13 floors. Sungwon was appointed as contractor for this project and they decided to use PERI as the technical solution and support that was offered for this complicated structure was very important for ensuring good performance by the contractor.

As the core wall has a special shape, it couldn't be formed in a common way. PERI's technical department found a solution in using the VARIO GT 24 formwork to form the curved core wall and climbing it with the CB 240 Climbing Platform, as well as having internal shaft platforms. As the core wall is curved, a special solution for the internal shaft had to be designed as well. The core wall area spans over 715 m² and requires a formwork height of 4.20 m. The second tricky part in the core wall is that there are small shafts in it, which also need to be covered.

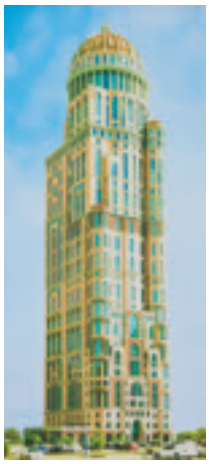
VARIO GT 24 is used to form the columns as the system is flexible enough to also form the racking columns, which are inclined by 15°. The slabs of the typical floors, which are done by using the PERI Tableforms, cover an area of approx. 2,000 m². To support the slab in the 5th floor PD 8 had to be used in some areas, as for architectural reasons there is an opening from the ground floor upwards. In those areas the height of the PD 8 towers is 20 m.

Due to the special circumstances on site and the fact that there is not a lot of space as the construction site is stuck between existing buildings and the road, the achieved cycle time is only 13 to 14 days.



Tableforms allow fast and safe shoring at the building edges

The Dome Tower, Dubai, United Arab Emirates



Contractor
CRC, Dubai
Field Service
PERI Dubai

Located very close to the Ibn Battuta Mall in the Jumeirah Lake Towers area, construction for The Dome Tower is underway. The Dome Tower will be a 176-m-high skyscraper with 41 floors and will accommodate approx. 300 offices and 475 parking spaces.

The contractor decided to use the ACS self climbing system as the crane-independent forming, striking and climbing, accelerates work procedures on the construction site and makes them independent from each other. This allows operational speeds to be effectively maintained. ACS can be climbed during all weather conditions.

Site personnel are provided with comfortable platforms, which ensure safe and efficient working routines as on the ground. The working platforms can be enclosed to provide ideal protection from the weather.

Working platforms can also carry high loads, For example, the storage of reinforcing steel for the next climbing lift. Even the placing boom for the concrete pump can be climbed on the ACS units, if required. The organised process from lift to lift allows high levels of productivity. The high formwork performance for pylons and multi-storey buildings corresponds to the values of an efficiently run construction project on the ground.

The slabs are formed with a combination of MULTIFLEX and Tableforms. MULTIFLEX has been chosen as it can be used for any slab thickness, any floor plan and all heights. The contractor invested in this formwork solution, as he will be able to use it on other projects in the future due to its flexibility. The Tableforms have been chosen as they are easy to use, fast and safe. Especially with the perimeter beams, the Tableforms allow safe shoring of the slab at the building edges.

Zaki Fouad,
Project Manager:
"We have decided to use PERI Formwork as it fulfils the safety requirements, is easy to handle and allows us a fast cycling period. In addition, we receive quick and professional support from the PERI team in the way that we expect."

The ACS bracket climbs smoothly and evenly on climbing rails using hydraulic pumps.

Inclined piers and huge superstructure efficiently constructed with system formwork

Saadiyat Bridge, Dubai, United Arab Emirates

In addition to the V-shaped piers in the centre of the bridge, 19 foreland piers for each of the three hollow boxes respectively are being constructed.

Development of the eastern foreland bridge is carried out on falsework in 55-metre sections using pre-assembled raised formwork units.

The main bridge is carried by two V-shaped, 20-m-high sets of triple identical piers per section. The inclination of each of the 12 individual supports is 27.45°. The formwork and scaffolding solution for the inclined individual supports consists of two sets of VARIO side formwork, a 7.76-m-wide, forward-inclined VARIO element with integrated working platforms, as well as a reverse-inclined raised formwork unit.

The 1,455-m-long, technically challenging construction has an impressive width of 60 m – one of the widest bridges in the world. It provides enough space on one level for ten car lanes as well as two railway tracks. 8 foreland piers in the west and a total of 11 on Saadiyat itself serve to support the three concrete hollow boxes with spans ranging between 45 and 135 m. The main bridge has a span of 200 m with an overhead clearance of 26 m in the bridge centre.

Contractor
Consortium
Ed. Züblin AG
Saif Bin Darwish Engineering Contractor
Field Service
PERI Nuremberg and Weissenhorn,
Germany and PERI Dubai

Alexander Schmalz,
Project Manager:
"With teamwork we developed an efficient and fast moving balanced cantilever construction. With the PERI solution all dimension changes from cycle to cycle were adapted with minimum effort."

This is based to a large extent on rentable standard material taken from the VARIO GT 24 girder wall formwork system and SLS heavy-duty spindles. Due to the large supporting angle, the high concreting loads are carried on the externally-positioned reverse-inclined formwork mounted on PERI UP shoring. Part of the steel girder framework installed by the contractors, which cantilevers over the sea – steel profiles over 900 mm high – provides a safe support surface with correspondingly reliable load distribution.

The modular structure and the metric grid dimensions of PERI UP allow optimum adjustment of the load-bearing construction to the forces, which are transferred via the raised formwork unit through the SLS heavy load spindles. 1.50-m-wide shoring towers are connected to form long supporting frame sections. Short 25-cm ledgers contribute here to the bundling of the standards at the points where the loads are applied. Thus, the individual load-bearing capacity of 40 kN per leg can virtually be multiplied at will, even for higher loads in the system without any time-consuming coupling of the scaffold tubes, as well as being adapted to the required load size. In connection with the high ledger rigidity of the PERI UP scaffold nodes, the scaffolding sections remain sufficiently stable in all situations. This means large scaffold units can be moved very quickly without their dimensional stability being impaired in any way.

The 7.00 m x 3.00 m individual supports are constructed alternatively in four climbing steps with concreting heights of 4.70 m – as well as by 2.44 m in an outward direction in each case due to the pier inclination. The PERI concept therefore allows that the supporting frame construction is pulled outwards on the steel girders after striking has been completed as though being guided along rails.

The PERI know-how is in demand, however, for all other construction phases as well – for both abutments, the numerous bridge piers in the foreland area through to the superstructure formwork. For the subsequent construction of the prestressed concrete hollow boxes, three different building methods are used: the western foreland bridge is realised using the incremental launching method, for the superstructure on Saadiyat Island in the east, falsework serves as a flat and even support, while the large spans in the middle bridge section are concreted by means of the balanced cantilever method.

Jens Nagel,
Deputy Project Leader:
"We are used to PERI´s reliability – both the technical support along with the systems. Not only is the formwork solution provided using VARIO and raised formwork units extremely stable but the PERI UP modular scaffold is also easy to install and can be used flexibly. The moving procedure takes place with large-sized units."

Climbing formwork offer safe operations and short time work cycle

LPG Tanks Assaluyeh, Iran

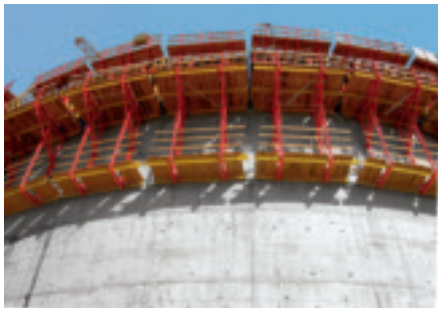
Contractor
Panahsaz Iran Co., Tehran
Field Service
PERI Tehran, Iran

Ahmad Bahrani, Project Manager:
"In structures like this, the correct choice of formwork system is of great importance. After a great deal of research, we chose PERI because of easy execution, safe operation and suitable, planned and short time work cycle. So far PERI presented a good support which is not considered by domestic competitors and this proves the company's proficiency at a universal scale. I, as an individual with a wide range of experience, highly recommend this company as a reliable partner."

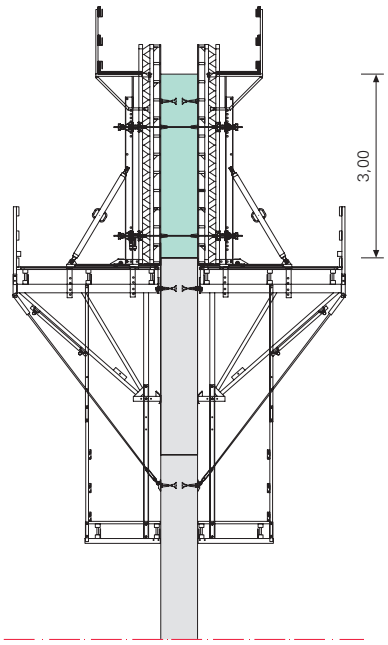
South Pars Gas field is the biggest gas field in the world and one of the major sources of energy in Iran, located on the border with Qatar. Precise and professional programming has been done in order to develop 24 phases for producing 820 million m³ gas per day, Iran Oil National Company undertakes to develop this field in different phases.

Panahsaz Engineering Company, established in 1989 and being one of the experienced domestic contractors, chose PERI to provide the forms of this project after the necessary, comprehensive inspection. Based on the frameless form of the VARIO GT 24 system and the possibility of execution in any size according to the condition of the site, operating would be a suitable choice to meet the needs of this project. Through this system, it is easily possible to make the round wall of the tanks. With relocation of GT 24 girder and changing the intervals, the pressure of fresh concrete at different heights is designable. The pressure planned for this project had been 40 kN/m² to totally fulfill the site´s needs. Regarding the fact that weight of this system along with all its accessories does not exceed 60 kg/m² and it could be integrated relocated if being up to 50 m², the operation would be highly speeded up. Changing the height of panels by special plates is simply done. The accessories of this system, such as guardrails and working platforms, would guarantee workshop safety.

CB 240 bracket, which is a proper bracket for supporting vast walls, led to easy application, short time pouring of concrete and adjustment of different wall structures. High bearing capacity causes big gaps between columns and, therefore, forming scaffold big units and bearing heavy weight simultaneously. It is possible to relocate forms and brackets in the form of single block units. A tower crane involvement in performing to climbing systems would be minimised.



Reliable: the PERI climbing formwork solution is based on the CB climbing scaffold system and the VARIO GT 24 girder wall formwork system.



Fast cycle sequences and reduced material requirements

Azzour Ground Reservoirs, Kuwait

SKYDECK components are made of aluminium. No component weights more than 15 kg. Thanks to the low individual weights, SKYDECK enables easy and tireless erection and striking, also in great heights.

Ras Azzour will be the largest seawater desalination project in the world. In only two years, five freshwater reservoirs with 250,000 m³ capacity each will be built. For each reservoir, 1,470 linear metres of external and baffle walls, up to 5.40 m high, have to be built. Therefore, just 470 m² VARIO GT 24 wall formwork were used with fast cycle sequences. For the huge 50,000 m² slab area, 24-cm-thick, for each tank, the contractor chose the SKYDECK aluminium panel slab formwork. With the drophead system, striking can be carried out after only one day, depending on the slab thickness and strength of the concrete. The panels can be separated easily from the concrete and immediately used for the next cycle. Furthermore, on-site material requirements are reduced to just 1,450 m² regarding panels and main beams.

Systematic assembly: also infill are quickly and easily formed with SKYDECK using system components.

Comprehensive PERI solution: VARIO GT 24 for walls and SKYDECK for slabs, up to a height of 5.40 m supported by MULTIPROP aluminium slab props with a high load-bearing capacity.

SKYDECK has a drophead for early striking. On-site material requirements can be reduced as the beams and panels are then available for the next concreting cycle. Work can be arranged more flexibly.

Contractor
First Kuwaiti for Trading & Contracting W.L.L.
Field Service
PERI Kuwait

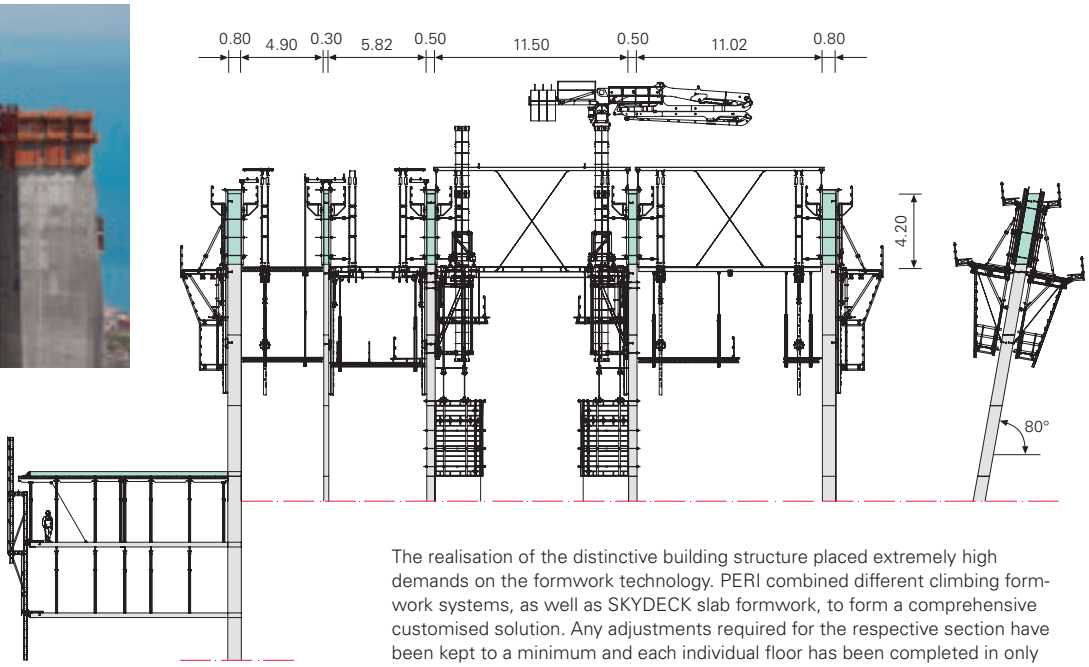
From the outset, all climbing variants were designed so that both the standard storey heights of 4.20 m as well as the up to 11 m high intermediate floors can be completed without any time-consuming and costly modification work being required.

Hani Abu-Haidar, Project Director:
"The PERI systems accommodate the continuously changing geometry with twisting and flaring walls. SKS and ACS climbing systems are easy to handle and incorporate high built-in safety features. ACS is flexible enough to easily cater for the continuous opposite rotation. The RCS Protection Panel is simple to lift and provides safe working conditions at the building perimeter. Independent of high winds and relieving the tower cranes to attend to other activities on site, SKYDECK is easy to assemble by hand. In general the PERI systems contributed in a major way to the success of the Al Hamra project and helped to achieve an 8-day floor cycle."

The Al Hamra Tower is situated on the eastern lifeline of Kuwait City near the characteristic water towers.

Winding elegantly upwards with customised climbing formwork

Al Hamra Tower, Kuwait City



Contractor
Ahmadiah Contracting & Trading Co., Kuwait
Field Service
PERI Kuwait and Weissenhorn, Germany

The realisation of the distinctive building structure placed extremely high demands on the formwork technology. PERI combined different climbing formwork systems, as well as SKYDECK slab formwork, to form a comprehensive customised solution. Any adjustments required for the respective section have been kept to a minimum and each individual floor has been completed in only eight days.

The Al Hamra Tower is a new landmark on the Persian Gulf, rising to an impressive height of 412 m. Designed by one of the world´s renowned and leading designers – the American team of architects Skidmore, Owings and Merrill LLP (SOM) – the building´s structure wrapped around the core in a counter-clockwise direction, which creates the impression of a spiral.

The internally-positioned core walls are constructed in advance with the help of ACS self-climbing technology. Working platforms have been formed which move reliably upwards from floor-to-floor by means of the ACS climbing unit without requiring a crane and regardless of weather conditions. The ACS could also be combined with the contractor´s own TRIO panel formwork. Furthermore, the PERI solution took into consideration the two cranes positioned inside the core as well as two placing booms, which climb together with the ACS platforms.

With protection being provided by the RCS climbing protection panel, floors and edge beams could be safely and efficiently constructed. Thus, site personnel in the top three floors under construction are constantly protected against falling and the effects of strong winds at large heights. Slab shoes were used for anchoring to the building itself and to guide the RCS climbing rails when moving to the next concreting section. The project team also decided to operate the climbing protection panel without any crane support. Using mobile RCS climbing devices, the costs incurred here are therefore extremely low because the small number of mobile hydraulic aggregates and cylinders actually required can easily be transferred from unit to unit by hand. From the outset, the RCS climbing units were positioned in such a way that the edge units could be moved horizontally from one facade edge to the next, due to the changing layout.

In order that the planned eight-day cycle can also be maintained for the floor areas, the construction site team has formed the close to 1,500-m² slab areas using SKYDECK under the protection of the RCS enclosure. Lightweight aluminium elements allow simple, fatigue-free and fast assembly. In addition, early striking can take place due to the SKYDECK drop head system.

The spiral form of the building not only results in different-sized floor areas, but also means that the southern core external walls, as well as the wing walls, undergo a change in position and length. To deal with this, climbing units were formed with elements from the SKS single-sided formwork climbing system and VARIO girder wall formwork. On the one hand, this solution is being used for single-sided climbing with massive structural components whilst, on the other, the up to 10° forward and reversed-inclined retention walls could also be concreted. The twisted form of the wall surfaces caused by the turn can be very accurately adjusted and realised with the VARIO wall formwork elements.

Fast climbing cycle sequences and high quality standard

Nile River Barrage, Naga Hammadi, Egypt

Photos: NHB-JV/PERI

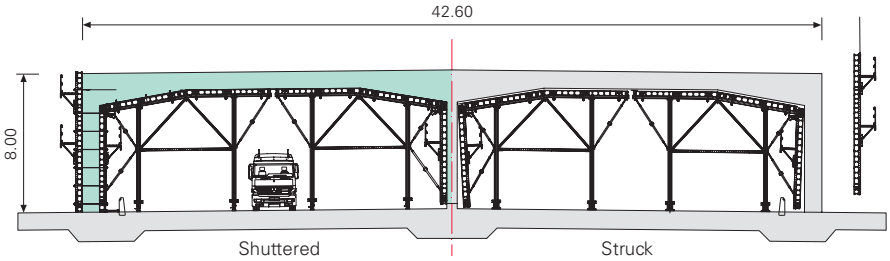
The enormous main columns have heights reaching up to 138 m and 17.50 m widths. Colossal intermediate walls with thicknesses between 1 m and 4 m reinforce and brace the structure. Altogether, for this up to 30-m-high construction, around 380,000 m³ of reinforced concrete were formed. In order to ensure the highest level of material utilisation as possible and to accelerate the production process even further, work was divided into horizontal and vertical casting segments.

The 330-m-wide dam across the Nile consists of a 64 MW hydro-electric plant, a seven-gate weir facility for water level adjustment and two 170-m -long navigation locks with widths of 17 m. The large volumes, consisting in part of powerful reinforced concrete structural elements, required the use of very stable and time-saving climbing formwork. By means of a proven climbing formwork solution – consisting of SKS climbing brackets and VARIO GT 24 girder wall formwork – two columns in the power station area, one column between the weir and lock facilities and six intermediate columns in the weir installation itself were built cost-effectively.

Contractor
New Naga Hammadi Barrage Joint-Venture (Bilfinger Berger, VINCI, Orascom)
Field Service
PERI Cairo, Eygpt

Semi-monolithic tunnel formwork allows 6-day cycle

NDIA Midfield Tunnel, Doha Qatar



Contractor
SinoHydro Gamuda WTC jv
Field Service
PERI Qatar LLC

A 6 days cycle was achieved with 2 sets of formwork length of 12 m, allowing a casting segment of 10 m.

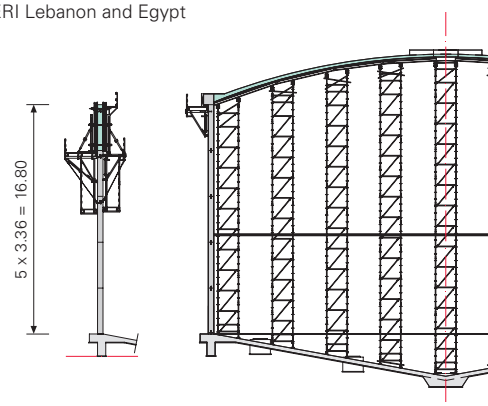
New Doha International Airport (NDIA) is expected to be one of the largest airports in the Middle East. The Midfield Tunnel allows service traffic under the runways. The 600 m tunnel consists of 2 semi rectangular tubes with varying wall and slab dimensions. In order to meet the tight construction schedule and to reduce cycle times to an absolute minimum, a complete tunnel carriage system with wall and slab formwork permanently fixed, allowed pouring the walls and top slab in a single pour (semi-monolithic method). Steel fixing, concreting, stripping of formwork, and moving to the next step was achieved in 6-day cycles. The solution provided maximum speed with minimum manpower.

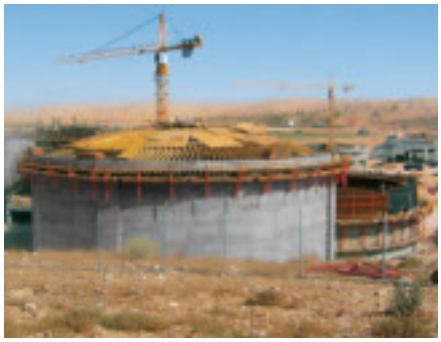
Versatile use of easily assembled formwork and scaffolding

Sewage Treatment Plant, As Samra, Jordan

Contractor
Morganti Group, Inc., Danbury, USA
Field Service
PERI Lebanon and Egypt

As Samra treats on average 267,000 m³ of waste water per day. 8 circular sludge activation tanks and 8 final settling basins, with diameters of 65 m and 54 m respectively, were to be constructed along with 4 septic tanks, each with a 34-m diameter and a height of 24 m. Close to 5,500 m² of wall formwork and 1,000 m² slab formwork were available on site. For the walls, VARIO GT 24 was used, so all construction units and applications could be cost-effectively produced using only one flexible system. To form the circular-shaped walls, GKZ articulated couplings ensured that there was always a friction-locked connection between the steel walers. CB climbing brackets provided safe conditions at all heights. For the septic tank slabs, a cost-effective MULTIFLEX solution based on GT 24 and VT 20 girders was chosen. With PERI UP Rosett, loads of up to 40 kN per leg could be safely transferred even at heights of 20 m. The DK tie system used here meant that the high degree of watertightness required throughout could be reliably achieved. Effective sealing of the tie points was carried out with PERI concrete cones which are tightly bonded in place.





With the PERI solution, walls and slabs could be cost-effectively formed and concreted with a high-quality finish.

Universal TRIO Panel formwork with few individual components and only one BFD coupler

Pars Multi Purpose Trade & Administrative Complex, Tehran, Iran

For the huge project in the centre of Tehran with 200,000 m² office space on 21 floors, the TRIO system was used for all walls and columns. For 3-m-high single faced walls, TRIO was combined with SB brace frames, designed for a concrete pressure of 60 kN/m².

Contractor
Iran CCL Company
Field Service
PERI Tehran

Eng. Jamali,
Project Manager:
"Many advantages, such as using only one linking and safety piece, have made it the best choice. High speed and readiness are among two remarkable advantages seen at the very first stages of working. I'm deeply impressed by the efficiency of the BFD clamps, which make adjusting and joining the panels an easy task. This system requires no professional labour force to assemble or disperse and operation is very simple."

PERI delivered up-to-date technology, consultation, fast service, training and exact plan designing.

■ PERI locations with stockyard.

Worldwide, PERI is the competent partner for all applications in the area of formwork and scaffolding technology. High quality made in Germany: the parent company of all firms in the PERI Group is PERI GmbH in Weissenhorn, Germany, where the main production also takes place.

Always in close proximity to the customers and their requirements – the extensive PERI services are provided by 47 independent subsidiary companies in 65 countries. In the Middle East region PERI is present in 8 countries with 3 stockyards to offer cost-effective solutions and a broad range of services.

PERI presence in the Middle East with a comprehensive range of services

PERI in Middle East

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Formwork
Scaffolding
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