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MIDDLE EAST ISSUE 06

NAD AL SHEBA BRIDGE

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ALSO IN THIS ISSUE... TRIPOLI AIRPORT, RECTANGULAR STADIUM, CABLE STAYED BRIDGE, TEXAS STADIUM AND SNAPSHOTS...

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EDITOR VIEWPOINT

Welcome to issue six of Formula Middle East magazine. 2009 was a tough year for the construction industry, but despite this, RMD Kwikform has had the opportunity to, and continues to work with its customers on some very exciting and unique projects, both in the Middle East, as well as around the world.

From the stunning Yas Hotel, showcased to the world for the Formula 1™ Etihad Airways Abu Dhabi Grand Prix, through to the sheer engineering feat that is the UK's Tyne Tunnel, our engineers have certainly had their work cut out and the whole team has delivered admirably.

In this issue we have a report showcasing our products being used on the expansion to Libya's Tripoli airport, an extension that will secure the airport's status as a key hub in North Africa. We also take a look at the bridge work for the amazing Meydan City, the gateway to the revamped Nad Al Sheba racetrack, which recently played host to the Dubai World Cup.

From an international viewpoint we have a report from a viaduct project in Wolvercote, UK, where a pre-assembled Paraslim solution has been so successful that it has been adopted as 'best practice' for future products by developer Costain. We also update you on the support we are providing for the Melbourne Rectangular Stadium in Australia, ensuring we deliver heavy-duty solutions safely and efficiently.

If you're eager to learn more about the projects RMD Kwikform has been working on throughout the world, then please take the time to visit Formula Online (linked from the RMD Kwikform website). Here you will find in-depth feature articles and onsite video reports about the application of our formwork and falsework solutions.

As always, if you have a project that you feel could or should be featured in future editions of Formula, then we want to hear from you. Your views, opinions and comments are always welcome; just contact a member of the editorial team at the bottom of this page.

Until next time, enjoy the read.

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IN THIS ISSUE

RMD KWIKFORM MAKES THE CONNECTION IN TRIPOLI

RMD Kwikform combines international logistics with local expertise to make a valuable contribution to the successful expansion of Libya's Tripoli airport.

The ambitious US$2.1 Billion expansion of Libya's Tripoli airport will make Libya the key player in the African aviation hub. Once completed the expansion will handle 20 million passengers annually and have the ability to serve up to 100 airplanes simultaneously.

For RMD Kwikform Middle East the focus was on supplying formwork and falsework equipment and engineering support for the construction of two 162,000m^2 main terminal buildings, baggage-handling areas and in excess of 1km of utility tunnel running alongside the concourses.

In fact, RMD Kwikform is supplying the majority of formwork and falsework to the project, including solutions for foundations, utility tunnels, walls, columns, beams and slabs. The fast track nature and sheer scale of the expansion project created a logistical challenge for RMD Kwikform, resulting in 1100 tonnes of equipment being mobilised within just 10 weeks, reinforcing RMD Kwikform's reputation as a truly reliable supplier of formwork and falsework solutions.

RMD Kwikform engineers first had to focus their attention on the construction of the 162,000m^2 terminal buildings and completion of the baggage-handling hall. The need to incorporate complex mechanical and electrical services made early completion of the 9.5m high Baggage Handling Hall the most critical part of the project to date.

Bernard Buenaluz, RMD Kwikform Design Engineer for the project met the challenge of creating 9.5m high walls in a restrictive time period head on: "The demanding architecture of this design meant we had to create a bespoke solution, RMD Kwikform provided all-steel column forms with four different cross-sections: circular, rectangular, T shaped and back facing semi circles. Large panel wall forms assembled from Superslim Soldiers and GTX are also provided in this area which, along with the column systems, are used in a climbing configuration with brackets and anchor screws to allow the full 9.5m height of walls to be achieved in just two pours, saving valuable programme time on this project."

"The demanding architecture of this design meant we had to create a bespoke solution, RMD Kwikform provided all-steel column forms with four different cross-sections: circular, rectangular, T shaped and back facing semi circles."

For the main structure of the terminal buildings, including baggage handling, central core and the three concourse areas the challenge was again about meeting the exacting needs of the design and programme time. The structure consists of 1m deep in-situ concrete beams at heights of 4.5m and 10.5m. These beams are supported using RMD Kwikform's 55kN Kwikstage and the fully galvanized 80kN Rapidshor respectively. The cast in-situ beams supported a range of pre-cast beams to form the typical slabs with a number of bespoke formed in-situ slabs where a precast solution was just not viable.

"The strong regional relationship between RMD Kwikform and the joint venture companies has allowed us to facilitate the reuse of equipment from our client's UAE stock-holding to provide a more cost effective and efficient solution to their project in North Africa."

The fast track nature of this project continued with the construction of the 1km utility tunnel. The key to delivering the tunnel within a strict programme time was to reduce crane time, by simply eliminating the need for constant craning of the shuttering; a considerable time saving could be attained.

Bernard Buenaluz, RMD Kwikform Design Engineer explains how RMD Kwikform delivered a solution to meet the customer's time scales. "We designed and supplied a formwork traveller assembled from steel Superslim Soldiers to carry four 6m long Superslim Soldier / GTX shutters continually along the length of the 1km tunnel, reducing crane time and accelerating construction. The slabs are poured soon after the walls and are formed with mobile tables assembled from 80kN Rapidshor systems. Undisturbed 4m long 120kN Alshor Plus legs are employed as back-propping to support the 400mm thick slab to facilitate early striking of the tables."

RMD Kwikform's contribution to this project went beyond supplying the necessary formwork and falsework, including regular visits from the RMDK Site Assistance team and the deployment of an RMD Kwikform Design Engineer to work within the engineering team of the clients, TAV, Odebrecht and CCC Consortium.

To assist in maintaining affordability on the project, a number of materials supplied by RMD Kwikform on previous projects such as the Dubai Mall project were reused at Tripoli airport. This combined with the permanent on-site engineering support enabled RMD Kwikform to deliver a highly cost effective, safe solution for the project, working with the clients to incorporate existing equipment. RMD Kwikform Middle East's Export Manager Alexis Potter; "The strong regional relationship between RMD Kwikform and the joint venture companies has allowed us to facilitate the reuse of equipment from our client's UAE stock-holding to provide a more cost effective and efficient solution to their project in North Africa."

The completion of Libya's Tripoli airport expansion is due to be unveiled to an expectant public in 2011.


Image courtesy of Peter Glenane/MPV July 2009

RECTANGULAR BIOFRAME STADIUM GIVES SPECTATORS AN ALL ROUND VIEW

RMD Australia puts its Olympic stadium experience to work in Melbourne, using a combination of Alshor Plus and Megashor to support the construction of the impressive Melbourne Rectangular Stadium.

With a whole range of top class sports teams in need of a world-class venue to play football, rugby league and rugby union, in May 2007 the Victorian State Government commissioned the design of the 31,000 capacity, AUD$267.5 million venue currently known as the Melbourne Rectangular Stadium (MRS).

Located in the Olympic Park Precinct, on Olympic Boulevard in Melbourne, Victoria, the new stadium will be home to football teams Melbourne Victory and Melbourne Storm.

As a key centrepiece for the development of the Melbourne Olympic Park, the MRS is set to combine cutting-edge design and architecture with practical facilities and seating that will offer an uninterrupted view for all sports matches and events. Made achievable thanks to its Bio-frame design, which incorporates a lightweight steel structure based on the inherent efficiencies of the world famous Buckminster Fuller geodesic dome, the roof will substantially cover the seating area, without the need for pillars, walls or other support structures.

Commenting on the MRS and RMD's involvement in its construction, Peter Muirhead Victorian/Tasmanian Regional Manager for RMD Australia said: "It is great to be involved with a world-class project of this kind, the bio-frame roof design itself is unique, and will give the MRS a very strong identity.

"From a design perspective, although we are dealing with supporting 50% less steel than a more traditional cantilever steel roof structure, thanks to the geodesic dome design, the strength and precision of the shoring solution is crucial. Having previously worked with contractor Grocon Constructors Pty Ltd on the Melbourne Cricket Ground Redevelopment in 2003 and 2004, the team at our Melbourne branch began looking at solutions to support the roof structure at the tender stage, using our heavy duty Megashor shoring system.

"Working together with experts at Grocon Constructors through early to mid 2007, we were able to develop a range of safe, practical and cost effective shoring solutions for the numerous challenges of the project. With the use of our Alshor Plus product, we were also able to demonstrate the lightweight but inherent strength of aluminium shoring, mirroring the benefits of the geodesic dome design itself.

"By focusing on these core deliverables, we were able to demonstrate how our equipment and design could meet the clients need for a versatile, labour saving solution. Our first challenge was to support the reinforced concrete beams ranging up to 950mm deep by 1,800mm wide in the podium slab areas.

"In turn these beams carried additional loads from precast hollowcore slabs used to form a base for the main facilities and seating areas. In order to support the installation of these slabs, we designed and supplied our lightweight Alshor Plus aluminium shoring, which was used to support our aluminium Albeam and Alform primary and secondary beams.

"Thanks to the high leg capacity of Alshor Plus, which is able to withstand pressures of up to 120kN/m^2, our design was able to

cater for the high loads, whilst providing the advantage of fast erection and safe dismantling of the falsework. As a modular system, with various leg heights, easy to use jacks and a simple one strike quick release mechanism, Alshor Plus was ideal for this application and having already used it on propping heights of around 4.5m, the client was familiar with the versatility of the product.

"It was for this reason they then decided to use it as a high level support system to provide falsework to an area of beams and slabs at level three of the stadium, approximately 18 metres high. The advantage of doing this meant that the system could be installed complete with bracing frames up to this height and once level three was completed, instead of having to take down the entire 18 metre high structure, the client was able to simply remove some of the leg pieces to take the system down to the next required level.

"By focusing on these core deliverables, we were able to demonstrate how our equipment and design could meet the clients need for a versatile, labour saving solution."

"In practical terms, this meant the construction phase could be reversed, installing the slabs from the 'top down' using the same system. This ultimately allowed levels two and one to be completed in just a fraction of the time, reducing equipment hire costs and labour - both important parts of the overall developments budget. Putting level three together first also gave the roof installation team swifter and safer access to the upper level to undertake critical early preparation work for the roof installation to be completed."

Following an analysis of the Alshor Plus system by the project management team, it was identified that the combination of the high leg load capacity and general 2.4m frame size of Alshor Plus would equate to less components, quicker erection and dismantling times, greater versatility, and reduced labour costs, when compared to traditional scaffold/support systems.

Thanks to this analysis and the performance of Alshor Plus for the slab installation process, engineers from RMD Australia were then asked to design solutions for the utilisation of Alshor Plus on various high-load shoring applications. These numerous tasks were located at various points throughout the construction of the substructure, concourse slabs and grandstands.

Having thousands of metres of Alshor Plus on-site at the peak of the project, the availability, cost effective use and familiarisation of the workforce with Alshor Plus led to its further use for various soffit support applications, whilst the installation of the unique roof structure which commenced during late 2008 took place. Once sections of the roof were installed, Alshor Plus was seen as the best solution to provide support and combined access for fitting roof panels.

With Alshor Plus playing an important leading role in the overall construction of the MRS, it was the use of RMD's heavy duty 1000kN/m^2 shoring system, Megashor, that enabled the safe support and installation of the roof structure itself. With Megashor Towers formed by connecting together four Megashor legs, braced with steel Superslim Soldiers, a safe and robust solution was developed to support the roof installation. Craned into position under each groin, which forms the junction of each shell profile on the bio-frame roof, the loads of the steel roof structure were able to be held into position safely using the Megashor towers.

Peter added: "As part of the safe siteing of the roof components, the Megashor Towers were engineered to incorporate special "headstock" arrangements, designed and supplied by the client. These specials enabled the precise connection of the individual steel components to the node points on the roof.

"It is great to see that a project of this scale and global profile has been able to recognise and benefit from the use of two of our leading falsework products."

"With the roof construction already underway it is estimated that there will eventually be twenty Megashor Towers, one positioned under each groin when the roof is fully in place. The highest of these four legged Megashor Towers will be approximately 24 metres from its base to the underside of the roof."

Peter concludes: "Hiring Megashor has allowed the client a greater degree of flexibility in their considerations for supporting the roof compared with the alternative of structural steel fabrication and purchase. It also means that components to make up each Megashor Tower can be supplied to programme for assembly as required, so do not have to be stored on-site.

"In conclusion, it is great to see that a project of this scale and global profile has been able to recognise and benefit from the use of two of our leading falsework products Alshor Plus and Megashor."

With the $267 million Melbourne Rectangular Stadium expected to be completed for its first event in early 2010, it is not long before the crowds of supporters will be able to watch every minute of their teams' games without obstruction.

ANOTHER WORLD BEATER FOR MEGASHOR

RMD Kwikform Iberica delivers a bespoke formwork and falsework solution to construct the world's widest, single pylon, concrete cable stayed bridge.

Increasingly, the ability to engineer challenging formwork and falsework solutions to visually stunning projects with global recognition is becoming the forte of not just RMD Kwikform, but in particular its Iberica division. Like recent projects that have gone before it, such as the Princess Letizia Congress Centre, or the Basagoiti viaduct, this latest project from RMD Kwikform Iberica does not disappoint, aesthetically or technically.

Developer UTE RONDA SUR DE TALAVERA, a joint venture between Sacyr, Aglomancha and J. Barcenas, awarded the contract to RMD Kwikform Iberica for the execution of the formwork and falsework for the cable stayed bridge structure and two viaducts along the Ronda Sur road in Talavera de la Reina, situated in the province of Toledo.

The 316-metre cable stayed section of the bridge reaches across the widest part of the river Tajo in a single span. Composing of a 36 metre wide deck anchored to a single 190 metre tall pylon by 38 cables on each side of the deck, this is the widest, single pylon, concrete cable stayed bridge in the world today.

Before work could even begin on this project, the river itself had to be channeled and an artificial peninsula created to provide adequate access to the site. Upon completion of the bridge the river will be returned to its normal course and natural state. Temporary piers were then built along the artificial peninsula to support the ongoing construction of the bridge. Once the cables are in place and tensioned to take the load of the bridge the piers will then be demolished.

"As a team, we have a reputation for creating innovative formwork and falsework to meet customer demands. This project also represents the continuing relationship we have with the developers on previous projects such as Menorca Airport and more recently the TVG line in Barcelona."

The creation of the peninsula, while giving access to the site is still liable to flooding in adverse weather conditions, this combined with the ground surface not offering adequate support for the Kwikstage shoring you would normally see on a project such as this meant an alternative shoring system had to be implemented.
Megashor towers, while having more than enough capacity to shore the bridge, required foundations to be anchored to, but given the ground surface this was not possible. Instead, RMD Kwikform Iberica engineers on the project decided to use the foundations of the temporary piers to anchor the Megashor towers.

While providing the solution needed, the temporary piers were not of an adequate width to shore the full span of the bridge deck. To overcome this the Megashor towers were arranged in a 'W' shape and anchored at the pier foundations. This solution allowed the Megashor towers to be securely anchored against potential flooding and still provide a wide enough platform to support the three 12 metre RMD450 beams joined together with a specially designed bolt-on strengthening plate, reinforcing the joins between the beams to create the 36 metre wide deck formwork.

In forming the deck there are a number of curves and polygons in the design of the bridge. Special parts were designed and created for different parts of the deck to achieve the client's desired angle and shape for the concrete. The need for specials on this project didn't end there.

A number of special components, developed by RMD Kwikform Iberica engineers, have been used in the construction of the

bridge's superior deck. The key to delivering the superior deck was to ensure it could be poured and cast all at once, this meant accommodating formwork for the bridge's four internal cavities and accommodating the all important transversal bars that stiffen the deck preventing any distortion once the pylon's 76 cables are attached.

Julio Merino, from the engineering department at RMD Kwikform Iberica describes how the special solutions were implemented on this project. "To accommodate the transversal diagonal bars we developed a metallic mold that would create the concrete block that would receive these bars. Once the mold and the bars were in place this would allow the superior deck to be created in a single pour.

The 76 cables that support the bridge need to run through the bridge to concrete blocks that receive them on the underside of the deck; here we had to pass a tube through the deck at a very precise angle, different for each cable. To ensure the angle was perfect an auxiliary structure was created from Superslim Soldiers, allowing us to make precise adjustments in height, angle and length and then lock the position of the tube ready for pouring with the cables in situ."

Julio continues, "The superior deck is angled on each side, to create this geometry with the formwork we adapted the standard IPE80 beam. We cut the beams to size to adapt them to the geometry of the deck and we added mounts for props on its underside that allow it to connect to telescopic props. At this stage of the project it's also important that the equipment is lightweight and versatile, as we have to move it out of the cavities through a worker access opening into the next section and so on. The lightweight construction of the IPE80 beam meant it was light, easy to move and relatively quick to assemble."

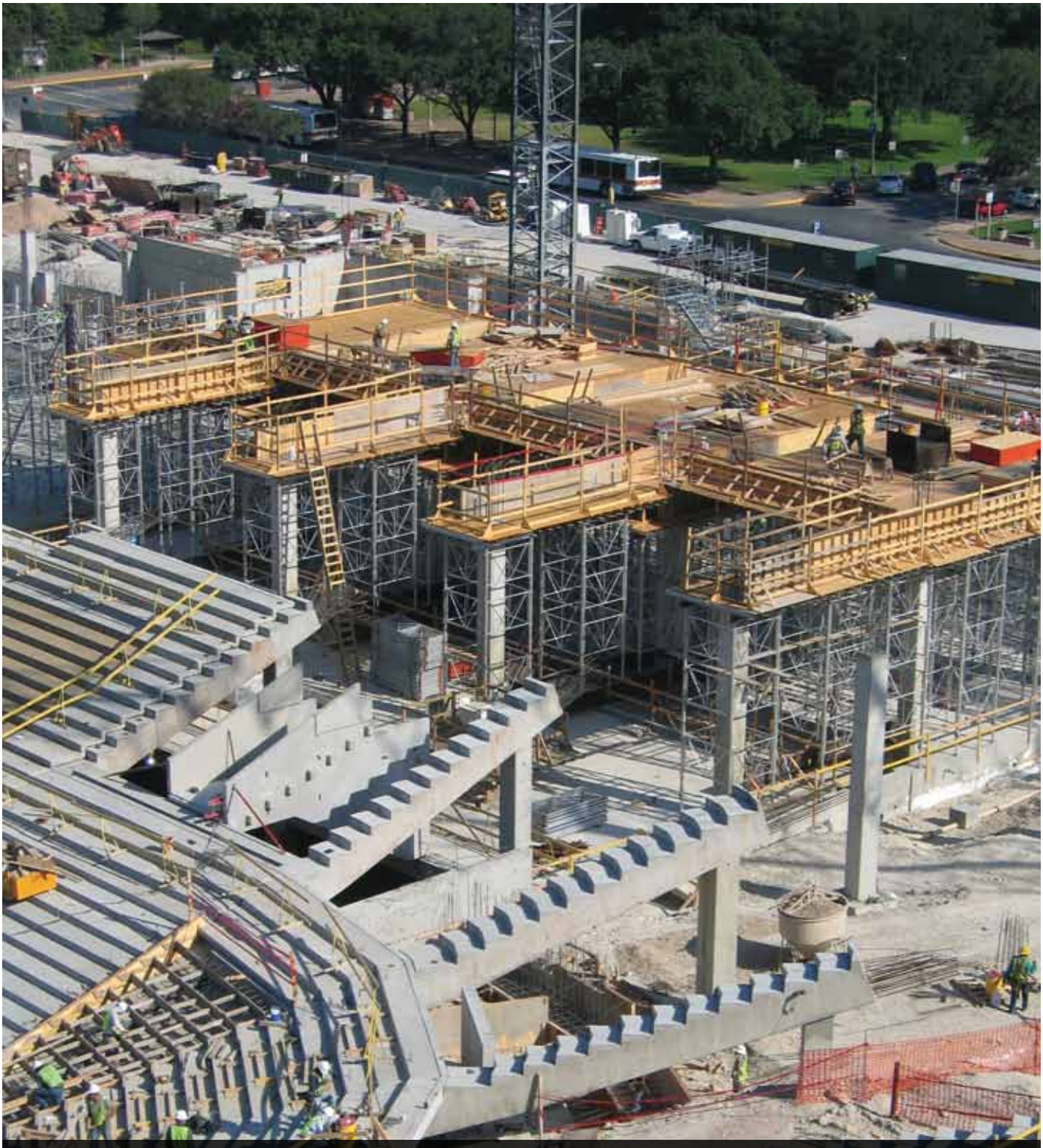
Once the bridge deck was in place, RMD Kwikform Iberica's engineering team turned its attentions to the concrete bulkhead that would provide the stage for the bridge's single 190 metre pylon. Here, the challenge was that the bulkhead is built on a structure called pier 0, which in itself is four metres high.

This meant that to form the rectangular 4.5 metre high, 22 metre deep and 16 metre wide bulkhead it had to be poured four metres above ground level, needing formwork to accommodate a height of 8.5 metres, and withstand the pressure of enough concrete to cast the bulkhead in a single pour.

The final solution consisted of formwork panels using Superslim Soldiers as primary vertical beams, and secondary T200 timber cross beams. These are then supported with adjustable Superslim Soldier props called push-pull props, which are adjusted between its axis. This incredibly versatile system combined with the inherent strength of the 150kN Superslim Soldiers allowed the structure to withstand the load produced by the sizable auto compactable concrete pour.

Antonio Vázquez, Sales Manager at RMD Kwikform Iberica commented on the success of the solution delivered on this project. "When we tendered for this project with UTE Ronda Sur de Talavera, we new our success in winning this contract would be our engineering expertise in delivering specialised formwork and falsework applications and solutions to improve build efficiency and meet deadlines.

As a team, we have a reputation for creating innovative formwork and falsework to meet customer demands. This project also represents the continuing relationship we have with the developers on previous projects such as Menorca Airport and more recently the TVG line in Barcelona."



TOUCH DOWN FOR ALSHOR PLUS WITH THE TEXAS LONGHORNS

Alshor Plus makes a successful College Football debut in America with its use in the construction of a new stand as part of a multi-million dollar development for the University of Texas .

Now watched by over 98,000 supporters, thanks to the development of a new stand using RMD Kwikform's Alshor Plus lightweight shoring system from American formwork specialist CMC Construction Services, the Texas Longhorns football team can now enjoy support from one of the largest crowds in college football.

The project itself involved the infilling of one end of the stadium known as the 'North End Zone' with a new stand that increased the seating capacity of the whole ground for the 2009 season from 75,000 to 98,638. With the current attendance record at 98,053 as of May 2009, the success of the new stand has already enhanced the spectator and players experience.

For RMD Kwikform's Business Development Director Roger Smith, the use of Alshor Plus for the project in itself broke the sports traditional mould, as he explained to Formula: "Traditionally in the American market stadia developments of this nature tend to use steel shoring and timber based formwork systems. The use of Alshor Plus was therefore a complete change for the industry, replacing heavy steel and timber with lightweight aluminium, almost like putting a tailback behind the offensive line!"

But for contractor Rago meeting the short deadline of just 6 months to complete the lower deck of the stand before the first game of the season in August required the use of a proven system that could be erected and dismantled quickly and efficiently.

Roger: "When you are helping a well established company like CMC Construction Services bring a new product and therefore new working methods to a nation as vast as the USA, it is important to make sure you provide the support needed to enable a smooth transition from traditional techniques to a system approach.

"The beauty of this project was its modular style build and symmetry as a number of Alshor Plus towers could be assembled at the same time and then just moved into place."

"Although Alshor Plus is itself a successful global product, that has been used on some of the most impressive projects in the world, like the Dubai Mall and the Worlds largest Hospital in Qatar, its use for the Texas Longhorns stand development was really made possible thanks to its successful application in the construction of a water tank in Albuquerque.

"It was working in partnership with CMC Construction Services on design and equipment erection training on-site by our engineering team that made the Albuquerque project such a success and gave CMC Construction Services the confidence to sell Alshor Plus for additional projects."

Having undertaken this training and purchased a large amount of Alshor Plus equipment, the CMC Construction Services team were able to demonstrate the flexibility of the system to Rago and working with the RMD Kwikform design team, develop a simple solution to the shoring needs of the project.

The construction of the structure itself involved the formation of a 10 level stand with a precast concrete slab used to form the seating area, ultimately supported by a number of concrete columns and 6ft thick in situ concrete beams. The role of Alshor Plus was to shore up the Aluminium primary and secondary beams supporting the plywood face for the in situ beams.

Because of the tiered nature of the structure a range of Alshor Plus legs sizes were used with the adjustable jack and in-built quick release mechanism also used to obtain the exact levels required for the design. With frames used to stabilise the legs, which have a capacity to withstand loads of up to 120kN the tallest Alshor Plus tower reached up to 22 metres.

Roger: "The beauty of this project was its modular style build and symmetry as a number of Alshor Plus towers could be assembled at the same time and then just moved into place. What we also discovered is that the traditional method of constructing shoring in America tends to be based around constructing towers in the horizontal on the ground and then lifting into them up into place using cranes. Having tested this approach with the Albuquerque water tank we were able to give this additional option to the erection team enhancing the safety aspect of using Alshor Plus still further."

With CMC Construction Services now using Alshor Plus for jobs in numerous states, its touchdown in the USA has certainly proved a crowd pleaser.

RMD KWIKFORM MIDDLE EAST APPROACHES THE FINAL FURLONG AT NAD AL SHEBA

RMD Kwikform Middle East secures the contract to supply formwork and falsework for the bridges leading to the world's richest horse race, the Dubai World Cup at the Nad Al Sheba racecourse.

One of the most eagerly awaited developments in the whole of the UAE, the Dh4.6 billion reinvention of the Nad Al Sheba Racecourse, is one that is very much in the public eye. RMD Kwikform Middle East was awarded the contract to supply the formwork and falsework for the construction of the bridges that lead to the racecourse's main grandstand.

Nad Al Sheba is the home of The Dubai World Cup meeting, famously known as the world's richest race. The challenge to create the access to a development worthy of this reputation was accepted by Afcons Construction Mideast.

The new course to be built upon the site of the old Nad Al Sheba racecourse will be much more than just a racecourse. Like many projects in Dubai, the scale of this project is immense, resulting in the development of the 1.4 million square metre Meydan City. There are three bridges that are the focus for RMD Kwikform Middle East - the main bridge over a future canal and two bridges leading to the main grandstand which run along a radius with a cantilevered edge on either side.

Arul Raja, RMD Kwikform Key Account Manager comments on the customer's specifications, "When we discussed the formwork and falsework requirements for the project with Afcons they specified a system that provided the speed and flexibility that would ensure demanding program times were met and that the system supplied be capable of being used

"When we discussed the formwork and falsework requirements for the project with Afcons they specified a system that provided the speed and flexibility that would ensure demanding program times were met and that the system supplied be capable of being used on other project sites as well as - most importantly - meeting the demands of this projects programme time."

on other project sites as well as - most importantly - meeting the demands of this projects programme time."

The key to meeting this requirement was RMD Kwikform's extensive 'off the shelf' products. The bridge construction was supported by a series of 80kN Rapidshor towers that were linked to provide additional support throughout the falsework. The towers are then topped with Superslim Soldiers to provide a platform for the attachment of the cantilever sections. Both Rapidshor and Superslim Soldiers are used in a wide range of formwork and falsework solutions, ensuring the flexibility required by Afcons to transport and use this equipment on further projects.

"The fact that the cantilever sections could be constructed on the ground and then lifted on to the bridge, rather than built in-situ delivers tangible benefits to meeting planned programme time. This innovative solution speeds up construction time by allowing almost simultaneous construction and pouring."

Although 90% of the formwork and falsework used was standard equipment, the remaining 10% was made up of a specialised adjustable Crank Soldier used to create the cantilevered edge. The Crank Soldier allows small adjustments to be a made to the formwork to ensure just the right shape is achieved for the cantilevered edge.

This cantilevered edge was created in individual sections and then craned onto the Rapidshor towers and fixed in place. Constructed from Superslim Soldiers with GTX beams to create the decking, once in place the cantilever could be poured and cured, ready to accommodate the final slab.

Arul continues: "The fact that the cantilever sections could be constructed on the ground and then lifted on to the bridge, rather than built in-situ delivers tangible benefits to meeting planned programme time. This innovative solution speeds up construction time by allowing almost simultaneous construction and pouring."

Mr Naseer Al Yasiri Project Manager at customer Afcons commented, "For this project we needed a formwork and falsework supplier who had experience of working on high profile projects in the Middle East to demanding programme times. RMD Kwikform worked very hard with us to provide the best solution to our brief."

Arul Raja continues, "Over the last few years we have done numerous Government RTA jobs, including bridges, tunnels and canals here in the UAE. It is on the strength of this experience that we have achieved this, our next major bridge project."

The new Nad Al Sheba racecourse, which is approximately five times the size of the original, was opened to expectant racing fans for the 2010 Dubai World Cup. It boasts a state of the art synthetic track, a 60,000 seater grandstand, a five start hotel, ten restaurants and parking for 10,000 cars. With the grandstand as its centrepiece the rest of Meydan City consist of mixed commercial and residential developments.

SNAPSHOT

We take a look at more RMD Kwikform projects in the Middle East...

MAFRAQ INTERCHANGE

RMD Kwikform Middle East has supplied an estimated 100,000m³ of Rapidshor for the construction of three bridges on Abu Dhabi's key infrastructure project the US$204 Million Mafraq Interchange. Consisting of three bridges in total, two 980m long bridges and 300m long bridge, RMD Kwikform equipment has been supplied on both a hire and sale basis. Two bespoke formwork and falsework solutions were designed and offered to client China Civil Engineering & Contracting Co. on this project. The first of these special solutions is a connector for Superslim Soldiers along the curve of a wing wall. The second is a heavy duty turnbuckle for the same section of formwork.

To facilitate time and cost savings on this build a special 'C' Hook was used to remove and relocate wing forms. This means the forms only have to be assembled once, and can be moved and be reused on a separate section of the bridge without having to be rebuilt. This has resulted in significant programme time and cost savings across the project to date. There will be a full report on this project in the next issue of Formula.

MAXIMA MAKES AN IMPRESSIVE DEBUT IN QATAR

RMD Kwikform is supplying formwork and falsework for the construction of a pumping station on the Lusail developments in Qatar for client Redco International W.L.L. The project as a whole consists of a forward pumping station, two motor control centres, a generator building, administration building, a lifting pumping station and a screen chamber. All the formwork and falsework equipment, including Alshor Plus for the slabs and a Superslim Soldier, GTX Beam configuration for the raft slab in this large-scale water treatment development is being supplied by RMD Kwikform Qatar.

Making its first appearance on a Qatar project are Maxima modular wall formwork panels which being utilised to construct 15 metre high walls in just two water tight pours. Matthew Dalton of Redco International W.L.L: "It became apparent to us, after reviewing the forward pumping station drawings and specifications, that to maximize the contract schedule we had to employ a panel system in the construction of the building. The Maxima panels are easy to assemble and reassemble depending on the area you are working in. They are fast and easy to place which has helped us in the speed of production. This job would have impossible without them."

WIN ME!

COMPETITION - WIN AN iPAD

RMD Kwikform is giving one lucky reader the chance to win a fantastic Apple iPad. All you have to do to be in with a chance of winning the iPad is subscribe to Formula Magazine, free, online at www.rmdkwikform.com/formula_online and provide the answer to the following question in the comments box.

Q: What project is featured on the cover of this magazine?

A) Nad Al Sheba Bridge **B)** Texas Stadium **C)** Tripoli Airport

The competition closes on the **30th July 2010**, the winner will be drawn and notified directly by RMD Kwikform.

TERMS AND CONDITIONS: The closing date for entries is the 30th July 2010. All correct entries will be placed in a draw for the iPad with the winner notified by RMD Kwikform in August 2010. This competition is open to all readers of Formula Magazine. Only one entry per person will be accepted. In accepting the prize the winner will agree to participate in the promotion of future competitions, allowing their name to be used in promotional activity. For full terms and conditions please email marketing@rmdkwikform.com.

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