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Advances in Access Control Have More to Do with Software than Hardware Issues (P. 22)

Waterproofing The Key to Design of Sprayed Concrete Lining of Tunnels (P. 30)

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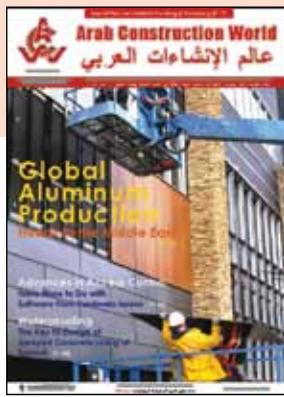
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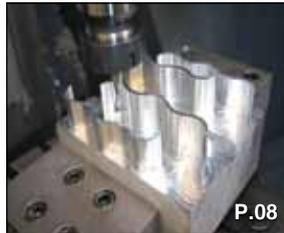
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**Industry Contacts:** This section carries the contact details of agents and distributors as well as companies active in a certain sector in the Middle East and North Africa.

**Agents and Distributors:** Provides companies seeking representation in the MENA construction market with the opportunity to be out there. Complete contact details are listed as well as region(s) of interest.

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### Project Monitor (Coming Soon)

This section highlights the latest news about major projects in the MENA. It is divided into four subsections:

- **Tenders Announcements**, requesting interested companies to make proposals, noting the deadline to do so;
- **Biddings** presented by the different interested parties;
- **Awarded Contracts** with info about the company; and
- **Project Updates** about the projects status along with work progress.

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## Region's Railway and Power Transmission Projects May Go Side by Side



The number of transport and infrastructure projects planned in the Middle East continues to grow at a rapid pace driven by the pressing need to deliver world-class transportation systems. Governments in the region, faced with the world's highest levels of population growth, have become aware that sustained long-term economic growth is highly dependent on strong transport infrastructures, and have therefore committed an investment exceeding \$150bn to address their transportation needs with a special focus on the development of interconnecting railway networks.

Railway projects worth \$108 billion are being developed in the UAE, Saudi Arabia and Qatar today. Following the Dubai Metro, rail projects in the GCC have become a point of focus with multi-billion dollar investments being made by each Gulf state.

A countrywide 1,500km railway network in the UAE totaling \$11 billion will be rolled out over the next 78-years. Abu Dhabi has also revealed plans for a new rail network serving the city of Al-Ain in the emirate's Eastern Region. Dubai Metro has completed its first phase with a whopping investment of \$ 6 billion, and another mass transit network with 75 km will carry 1.8 million passengers per day by 2020.

Transport ministers of the GCC approved last year a feasibility study for the \$12 billion region-wide railway. On a broader perspective, the network would also extend from the GCC to Jordan, Syria and Turkey. The next move would be a more extensive system linking up with systems providing access to Europe and Asia via Turkey.

What's more, governments in the region have discussed connecting national electric power grids in parallel with the development of new international railway lines. According to Roger W. Faulkner of Electric Pipeline Corporation, a new power transmission technology called "elpipe" can be applied across the entire MENA. Rail lines and elpipe technology can both share the same right of way and benefit from reduced construction costs.

Elpipe technology involves polymer-insulated underground HVDC conductors designed for higher efficiency and capacity than is practical for overhead power lines, explains Faulkner in his article on page 12. Elpipes placed next to railway lines would be easier and less costly to install, access and maintain than overhead and undersea technologies.

Enjoy reading the August issue of ACW magazine.

**Amer Elias El-Haddad**

Editor & Researcher / Content Writer

## مشاريع السكك الحديدية ونقل الطاقة في المنطقة قد تمشي جنباً إلى جنب

لا يزال عدد مشاريع النقل والبنية التحتية المخطط لها في الشرق الأوسط ينمو بوتيرة سريعة تدفعه الحاجة الملحة لتقديم أنظمة نقل ذات مستوى عالمي. تواجه الحكومات في المنطقة اليوم أعلى مستويات للنمو السكاني في العالم وهي أصبحت مدركة أن النمو الاقتصادي المستدام على المدى الطويل يعتمد اعتماداً كبيراً على بنية تحتية قوية للنقل. لذلك قامت بتخصيص أكثر من ١٥٠ مليار دولار من الإستثمارات لتلبية إحتياجات النقل لديها مع تركيز خاص على تطوير شبكات سكك حديدية مترابطة.

يتم حالياً تطوير مشاريع للسكك الحديدية تصل قيمتها إلى ١٠٨ مليار دولار في كل من الإمارات والسعودية وقطر. هذا وأصبحت مشاريع السكك الحديدية في الخليج نقطة تركيز، بعد تجربة مترو دبي، مع إستثمارات بمليارات الدولارات تقوم بها كل دولة خليجية.

سيتم مد شبكة سكك حديدية بطول ١٥٠٠ كم في دولة الإمارات على مدى السنوات الثمانية القادمة بقيمة ١١ مليار دولار. هذا وكشفت أبو ظبي عن خطط لإنشاء شبكة سكك حديدية جديدة لتؤمن إحتياجات مدينة العين في المنطقة الشرقية من الإمارة. وقد تم إنجاز المرحلة الأولى من مترو دبي بإستثمار ضخم قدره ٦ مليارات دولار، كما ستؤمن شبكة أخرى للنقل الجماعي بطول ٧٥ كيلومتر نقل ١,٨ مليون راكب يومياً بحلول عام ٢٠٢٠.

وافق وزراء النقل في دول مجلس التعاون الخليجي في العام الماضي على دراسة جدوى لسكة حديدية تبلغ قيمتها ١٢ مليار دولار وتمتد في المنطقة كلها. ستمتد هذه الشبكة أيضاً، على نطاق أوسع، من دول مجلس التعاون الخليجي إلى الأردن وسوريا وتركيا. أما الخطوة التالية فستكون إيجاد شبكة أكثر شمولاً ترتبط بالشبكات المؤدية إلى أوروبا وآسيا عن طريق تركيا.

من ناحية أخرى، ناقشت الحكومات في المنطقة موضوع ربط شبكات الطاقة الكهربائية ببعضها البعض بين البلدان وذلك بالتوازي مع تطوير خطوط السكك الحديدية الدولية الجديدة. وفقاً لروجر فولكنر من - إلكتريك بايبلاين كوربوريشن - هناك تكنولوجيا جديدة لنقل الطاقة تسمى - إيلبايب - يمكن تطبيقها في جميع أنحاء منطقة الشرق الأوسط وشمال أفريقيا. يمكن لخطوط السكك الحديدية وتكنولوجيا إيلبايب مشاركة نفس المسار على الأرض والإستفادة من تكاليف بناء منخفضة.

تقوم تكنولوجيا الأنابيب الكهربائية المعروفة بإيلبايب على موصلات للتيار الكهربائي المستمر العالي الفلطية معزولة بالبوليمر وممدودة تحت الأرض، مصممة لتوفير فعالية وقدرة أعلى مما توفره التمديدات الكهربائية فوق الأرض، كما يوضح فولكنر في مقالته صفحة ١٢. عملية مد الإيلبايب بجوار خطوط السكك الحديدية هي أسهل وأقل تكلفة على مستوى التركيب والوصول والصيانة مقارنة مع الكابلات الجوية أو تحت المائية.

تمتوا بقراءة عدد آب/أغسطس من المجلة.

عامر الياس الحداد

محرر وباحث / كاتب محتوى

*Amer Elias El-Haddad*

## Bahrain



### Bahrain to Build Two Towers to Help Orphans

King Hamad of Bahrain has donated BD10 million (\$26.5 million) to the Royal Charity Organization (RCO) to finance the construction of two investment towers, the revenue from which will benefit orphans.

The King, who is the RCO's honorary president, also ordered kindergartens to be built for orphans across Bahrain, as part of the charity project. RCO board of trustees' chairman Shaikh Nasser bin Hamad Al Khalifa announced the Royal donation, saying the scheme would go ahead without delay.

He praised the King's continuous care for orphans, widows and needy families to ensure them a better future and decent standard of living. The RCO board has studied a string of potential investment projects, under directions from the King, it was revealed at a board meeting.

"We gauged the economic feasibility of the proposed schemes to ensure substantial revenues benefiting all citizens," said board deputy chairman Shaikh Adnan Al Qattan. "These projects will herald a quantum leap for charity work and boost its resources."

RCO secretary general Dr. Mustafa Al Sayed outlined the scheme, describing the package as a boost for needy Bahrainis. He stressed the crucial importance of community partnership with the private sector in promoting charity schemes.

## Egypt



### \$1bn Tunnel to Be Built under Suez Canal

Egypt plans to build a \$1 billion tunnel under the Suez Canal at Port Said

and will begin seeking finance as soon as the designs are completed. The tunnel, to be built 19 km south of the Canal's northern entrance, will have 3 passageways, one for rail and two for cars, Investment Minister Mahmoud Mohieldin said in a conference.

The conference was held to discuss investment in the cities along the canal and in the Sinai, which the government is keen to develop following a number of clashes between security forces and impoverished Bedouin tribes.

"There is good cooperation with international investment funds to

finance the project, which will be entirely financed outside the state budget," Mohieldin said.

Egypt now has two points for cars to cross the waterway - a tunnel near the city of Suez and a bridge near Ismailia. Once the Port Said tunnel is finished, another tunnel is planned for Ismailia, Mohieldin told the conference.

## Kuwait



### Kuwait Signs \$6.9bn Deals as Part of Development Plan

Kuwait has so far signed contracts worth more than KD2bn (\$6.9bn) as part of the government's ambitious

development plan for the country, said Sheikh Ahmad Fahad Al-Ahmad Al-Sabah, deputy Prime Minister for Economic Affairs, Minister of State for Development Affairs and Minister of State for Housing Affairs. The deals had been inked to implement "several vital projects" envisaged in the development plan, he added. The country's \$104bn plan aims to alter its infrastructure in sectors including education, housing, and healthcare.

"These projects are part of the country's quest for transformation

into a leading international financial, commercial and service hub," Sheikh Ahmad said. His comments came after the signing ceremony of a contract between the Directorate General of Civil Aviation (DGCA) and the developer of the first stage of the project to launch Kuwait Cargo City at Kuwait International Airport (KIA). "The development projects focus on improving the infrastructure and the public utilities nationwide particularly the land, sea and air ports this year and the coming year," he said.

## Oman



### Oman to Build \$1.5bn Bridge

Oman plans to build a \$1.5bn bridge to a turtle habitat island off the Gulf Arab state's east coast to boost tourist numbers, a finance ministry official said. The tender process will be open to international bidders and start early next year for the construction of the bridge. "The bridge will lure tourists to Masirah Island to (see) rare species

in a project or two," the official from the finance ministry said.

## Qatar



### Qatar to Lead GCC Infrastructure Development

Qatar is on course to lead the region in terms of infrastructure projects in the short term despite a near-22 percent slump in its construction sector last year, a new Business Monitor International report has said.

"Despite these figures, BMI is still optimistic that Qatar will outperform other countries in the region—in the short term, the low base effects from 2009 will drive high growth in 2010 (forecast at 17 percent year-on-year). Over the next five years, growth is expected to average 9.9 percent between 2010 and 2014." BMI said its optimism was backed by government investment plans in which 36.9 percent of the 2010/2011 fiscal budget (\$11.9bn) has been allocated for major capital projects, with infrastructure set to account for the majority of this (\$9.7bn).

## Saudi Arabia



### Saudi Construction Sector Seen Growing in 2010

Saudi Arabia's construction industry, one of the largest in the Middle East, will continue to present opportunities to investors over the next four years as infrastructure continues to be central to the government's expenditure plans, a new Business Monitor International report has said. BMI is forecasting a 6.8 percent growth in the kingdom's construction sector in 2010, fuelled by billions of dollars of projects either in the pipeline or currently under way. According to BMI's Key Projects Database, \$80bn worth of infrastructure projects are currently underway in the country. Based on the number of ongoing projects, BMI analysts said they are optimistic for the medium term outlook for Saudi Arabia, with average real growth of 4.13 percent forecast per year between 2010 and 2014. "Although not exactly booming, considering the size of the industry, it is strong growth," the report said. Industry value is forecast to rise from SR92.2bn (\$24.57bn) to SR122.48bn (\$37.70bn) over the same time period, BMI's report added. "This is couched in strong fundamentals for continued demand for construction projects, from housing to transport," said BMI.

of turtles like the loggerheads and greenbacks," a finance ministry official told Reuters. Masirah Island is home to both species. Other turtles which nest there are the hawksbill and the Oliver Ridley. When finished, the bridge will be about 40 km long and would be among the longest sea bridges in the world. Oil-rich Oman attracts about a million tourists a year, 60 percent of whom come from other Gulf States. Earlier this year Omani company Ominvest said it was planning to build a \$1 billion tourism resort in the southern port city of Salalah. "We expect more revenues than predicted this year, though we can't say what percentage, due to higher oil prices than forecast for the 2010 budget. That way, we can squeeze

BMI said in its Q3 Infrastructure Report that it remained optimistic that Qatar would outperform other countries in the region to 2014. Despite new data which revealed a big drop in its construction industry in 2009 after three years of rapid growth, BMI analysts said Qatar was still one of its top markets in the Middle East. The Gulf state's construction sector value fell to just above \$7bn in 2009, a real contraction of 21.8 percent, BMI's report said.

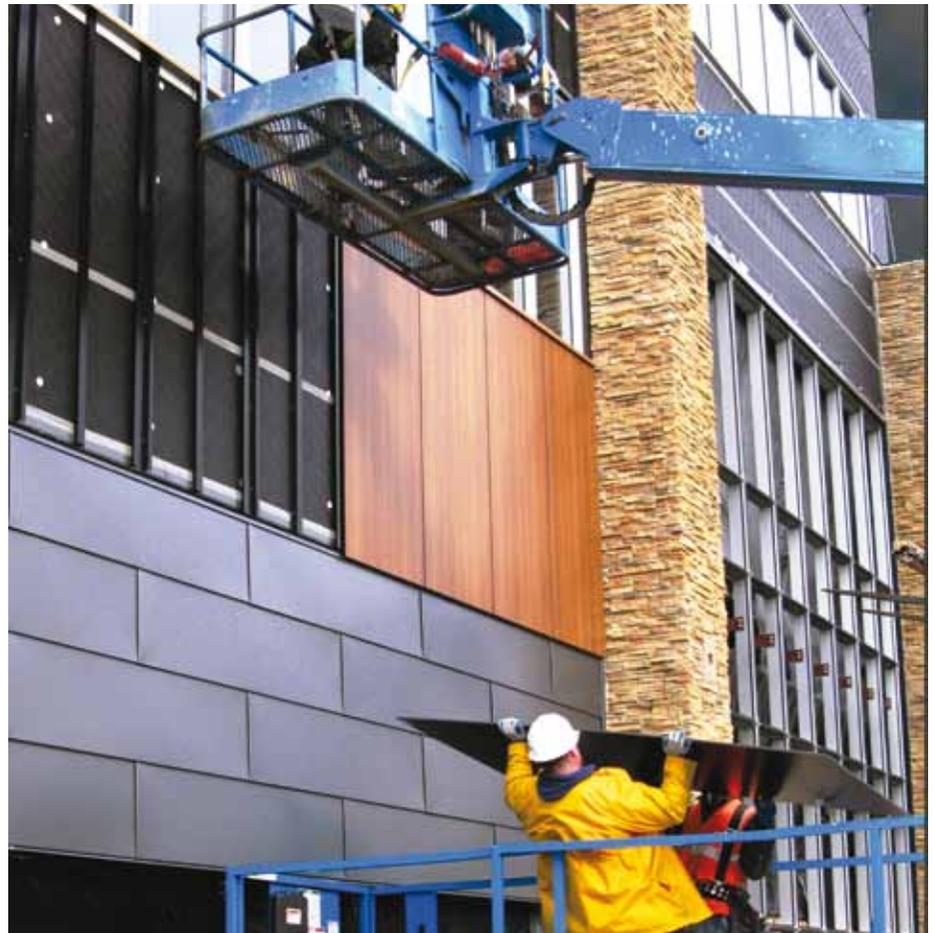
# Global Aluminum Production Heads to the Middle East

**T**he global recession did more than push half of the world's aluminum supply into the red; it also accentuated the shift of production centers to lower cost or subsidized jurisdictions – a move that is unlikely to be reversed. An analysis from VM Group research for Fortis Bank Nederland shows how new producers are rapidly expanding the global aluminum market.

Some European governments are attempting to maintain the status quo on aluminum. For example, the Italian government, which is intent on saving jobs, has offered Alcoa a backdoor route for a reduction in power costs, by decreeing that industry users will receive cut-priced power tariffs because of potential disruption caused by 'necessary' work to power cables stretching between the mainland and the islands of Sicily and Sardinia, where Alcoa has one of its smelters, at Portovesme.

This would obviously be attractive to Alcoa, should it succeed in obtaining cheap power; but the move by Rome still needs to be reviewed by the EU, which has ordered Alcoa to repay \$300m it had received in subsidies since 2006 from the Italian government. Nevertheless, even if Alcoa does manage to obtain cheap power and remain in operation in Italy, in the long-term it's unlikely to save the two smelters; subsidizing power supplies is not cost-effective, especially when there is increasing pressure to control big emitters of greenhouse gases, and demand from downstream industries is increasingly shifting to the Far East.

Elsewhere in Europe the Montenegro government is also trying to save its aluminum sector, budgeting the equivalent of €85m (\$110m) in loan guarantees for aluminum smelter Kombinat Aluminijuma, while Bosnia's sole smelter, Aluminij Mostar, is calling for more favorable power tariff terms. Germany and France have also recently had their upheavals in their aluminum industry, and the UK smelter, Anglesey Aluminium, closed this year. Against this backdrop of struggling



aluminum production in the US and Europe is the rise of Middle Eastern, Indian and Chinese production capacity. The past decade has been characterized by China's astonishing thirst for aluminum. This supported a huge increase in China's aluminum production capacity from approximately 4 Mt/year in 2000 to an estimated 20 Mt/year in 2010, a 400% rise. The then traditional stalwarts of aluminum supply in 2000, North America and Europe, did not keep pace. North American production capacity has risen by just 6.2% over the decade, to 7 Mt/year in 2010, entirely due to growth in Canada, while Western Europe's capacity may have fared better, rising 19% over the decade, to 4.6 Mt/year in 2010. This was due however to new and expanded supply in the lower energy cost environments of Iceland and Norway, where the sector's future remains secure due to good access to cheap power supplies with the benefit of long-term security of relatively low power tariffs.

### The new producers are rapidly expanding

In the Middle East, production capacity has soared, with more additions on

the horizon. The cheap gas by-product from its oil refineries makes the region an ideal place to locate heavy power-using industries. Since 2000, apart from China, the Middle East region has seen the largest growth in aluminum production capacity, rising by 250% to 3.3 Mt/year in 2010. By 2013, capacity will have risen to almost 4.2 Mt/year and to 4.7 Mt/year two years later, overtaking Western Europe. The production start-up of UAE-based Emirates Aluminium's (Emal) first pot line on 14 January 2010 perfectly symbolizes the underlying realities of global aluminum production – a steady and continuing shift to regions where costs are lower.

When it reaches full capacity the new Emal plant will account for about 2% of global production (at 2008 levels), or 720,000t/year. It joins a growing list of Middle East capacity expansion, such as Dubal in Dubai and Qatalum in Qatar. Qatalum, which is a joint venture between Hydro of Norway and Qatar Petroleum, is expected to produce about 350,000t of aluminum in 2010, rising to 585,000t at full capacity in 2011. Oman also commissioned its 360,000t/year Sohar smelter in 2008/2009, while the Ma'aden



joint venture with Alcoa is expected to go online in 2013 India has abundant alumina deposits and much of its smelting capacity is integrated with coal-fired power stations in close proximity to coal deposits. India's annual aluminum production capacity has risen from as little as 0.7 Mt in 2000 to 2.2 Mt in 2010. Were it to follow in China's footsteps, then its output capacity would be expected to treble by 2020. By far the largest contributor is Vedanta's, through the construction and expansion of its Jharsuguda and Jharsuguda II smelter, which together add 0.8 Mt in 2010 and another 0.8 by 2012.

North American aluminum and Western European utilization rates have declined in the past 13 years relative to the rest of the world. In the first chart, Oceania and the Middle East have kept rates upwards of 95%, even through the global recession, while North American rates have steadily fallen throughout the past decade. Asian rates, which really just reflect China, have moved between 75%-

95%, but this is partly owed to the introduction of new capacity and the subsequent ramp-up in production. Asian rates did drop to 75% during the worst of the global recession but are now back at 90%. Western and Eastern European utilization rates were both hit hard by the onset of the global recession, falling to as low as 70% in 2009.

Drilling down further it can be seen that the slide in North American utilization rates is wholly due to the US, with utilization currently creeping along at 40% of total production capacity. This includes Alcoa's soon to be mothballed smelters and other smelters that have yet to announce any restart dates. Canadian supply meanwhile has remained at full capacity over the past decade, without interruption. In Western Europe, utilization rates in the UK, Spain, France and Germany have all fallen from pre-crisis levels, including Norway's, while production in the Netherlands and Iceland has remained unaffected.

Iceland's power tariffs are favorable,

placing much of its aluminum smelters in the lowest quartile on the cost curve, while Norway's large aluminum smelter industry has faced a tough phase, moving from older, inefficient Soderberg smelting technology to modern technologies, but its power tariffs remain favorable and Norway should be able to maintain its position as Europe's largest producer for several years to come.

On a global scale, aluminum production is heading East, and as power costs inevitably rise there will be further smelter closures in the US and Europe resulting in the region becoming a prolific importer of primary aluminum or aluminum products. Asia will account for about 30 Mt/year of global aluminum production capacity by 2013, or 55%, from just 6 Mt/year, or 6%, in 1999. This rapid expansion has and will continue to come at the expense of more marginal smelters in North America and Europe. ■

#### Source

VM Group research for Fortis Bank  
Nederland - Metals Monthly April 2010

لم يتم الركود الاقتصادي بدفع نصف الإنتاج العالمي للألومنيوم نحو منطقة الخطر فحسب، بل زاد أيضاً من تحوّل مراكز الإنتاج نحو الكلفة المنخفضة أو الإختصاصات المدعومة، وهي خطوة من غير المرجح أن يتم التراجع عنها. على المستوى العالمي يتجه إنتاج الألومنيوم نحو الشرق، وفي حين ترتفع تكاليف الطاقة دون محال سيتم إغلاق المزيد من المصاهر في الولايات المتحدة وأوروبا الأمر الذي سيدفع بالمنطقة لتصبح المستورد الرائد للألومنيوم الخام أو منتجات الألومنيوم. وسيصل إنتاج آسيا السنوي إلى نحو 30 مليون طن بحلول عام 2013، أي 55% من الإنتاج العالمي، بعد أن كان فقط 6 مليون طن في عام 1999. سوف يستمر هذا التوسع السريع بالحصول على حساب مصاهر أكثر هامشية في أميركا الشمالية وأوروبا.

## Reynobond® Architecture Aluminum Composite Panels in Gabon Project

Total harmony symbolizes the exclusive Spa Yacine in Libreville (Gabon, West Africa). Sleek cubes, horizontal lines and a shimmering green aluminum facade, used by the architect to reflect the nearby botanical garden, instill a tranquility mirrored inside the building.

Architect *Ahmed Chami* and his wife, *Nadia Benmoussa*, architect and interior designer, were appointed to manage the entire project. Aside from managing the construction work, they were also in charge of the architectural design and implementation, interior design and the gardens, as well as the operational organization. The result is an integrated concept which, incorporated into the natural surroundings, offers visual and physical diversity and recreation.

The complex exudes an air of informal tranquility, achieved by the alternat-

ing use of vertical and horizontal elements – among them the stairway to the main entrance, vertical recesses on the front and horizontal elements on the facade. It is the design of the facade which is pivotal to the harmonious nature of the building, however. The shimmering green surface of Reynobond® Architecture aluminum composite panels, from **Alcoa Architectural Products**, is a particular inspiration to architect Ahmed Chami: "The iridescent color gradients of the chameleon coating mean that, depending on the reflection and intensity of the sun, the surface reveals ever-changing colors, glossy hues and depths. The building hence fits perfectly into its surroundings."

In addition to the natural effect, Chami also used the practical benefits of the Reynobond® aluminum composite panels: simple to work



with, mechanical properties such as minimal expansion or enhanced strength and resistance to weathering. The latter is attributable to the high-tech DURAGLOSS® 5000 coating and its resistance to wear and tear, salt, moisture and UV rays. For architects this is a valid argument, even when staff and visitors to Spa Yacine ultimately only notice the design. ■

## Aluminum Machining Made Easy thanks to Dormer Tools



**Dormer** has introduced a range of new drilling, milling and threading products designed specifically for the machining of aluminum alloys.

While most manufacturers offer two separate drills to machine different grades, Dormer's CDX-AI carbide drills can perform over the whole aluminum material group, from softer grades to the most abrasive with higher silicon content.

Available in two standard lengths: 3xD (R587) and 5xD (R583), the CDX-AI drills feature a unique point geometry that minimizes thrust forces required to drive the drill through the workpiece, significantly reducing entry and exit burr. This not only ensures a high quality hole finish but also minimizes machine downtime.

Dormer's family of solid carbide milling cutters for Aluminum covers a wide range of precision applications with state-of-the-art CNC machines.

The S143, S144, S145 and S540 (ball nosed) end mills are designed with a neck and extra long effective length to prevent the shank coming into contact with the workpiece. A high axial depth of cut can therefore be achieved with a short cutting length, with the added benefit of high tool rigidity.

The S149 features a reduction along the full length of the shank in order to maximize performance in deep pocket milling and profiling operations. This allows the user to adjust the length of the tool projecting from the tool holder, minimizing the risk of chipping.

All feature an extremely highly polished surface that reduces friction between the surface of the tool and the workpiece, making for fast, efficient swarf evacuation and minimal downtime.

Dormer's solid carbide forming taps for Aluminium – the T115 (solid design) and T116 (internal coolant) – enable a chip-free operation and the production of a strong thread in both through and blind-hole operations. The highly stable design reduces the risk of tap damage but also allows the taps to be run at higher speeds compared to thread-cutting taps, allowing increased productivity. ■

## Emirates Aluminum Standardizes on Intergraph® SmartPlant® Foundation



**Emirates Aluminum Co. Ltd. (EMAL)** has selected Intergraph® SmartPlant® Foundation as its standard life cycle document and data management solution for the operation of the world's largest single-site aluminum smelter in Al Taweelah, Abu Dhabi. The US\$5.7 billion six square-kilometer site project is making history by being the largest greenfield aluminum smelter project ever built at once and one of the largest industrial projects in the UAE outside the oil and gas sector.

SmartPlant Foundation will help EMAL manage the vast amount of engineering data that is needed for such a large project. EMAL will organize its plant data using SmartPlant Foundation and integrate it with existing maintenance systems to optimize operations and efficiency over the life cycle of the smelter. By preserving the integrity of the data, EMAL will avoid redundancy and save valuable time and money. EMAL chose SmartPlant Foundation because of its superior technical and data integration capabilities, widespread industry adoption and ability to scale for large projects. Intergraph's local distributor, ATHEEB Intergraph Middle East LLC, was instrumental in EMAL standardizing on SmartPlant Foundation and will be providing support services for this and future projects.

SmartPlant Foundation is the ISO15926-compliant document and data management solution within Intergraph's SmartPlant Enterprise. Its life cycle data management enables a smoother handover for engineering, procurement and construction companies (EPCs) to owner operators and for owner operators to more easily maintain, modify or expand their plants. The solution permits electronic management of all project and plant engineering information, integrating data on the physical asset, work processes, and regulatory and safety imperatives to facilitate enhanced global decision support capabilities.

"We're using SmartPlant Foundation (SPF) because it allows us to easily transfer data throughout the systems in phase one of the EMAL Smelter," said *Salman Abdulla*, EMAL Vice President, Operations. "SPF provides a complete solution for sharing engineering data and integrates document management with engineering tools." ■

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# Safety through Visibility

## Road Markings Do Their Bit for Road Safety

A Zehntner GmbH Article

**T**o find one's way in traffic flow is easy – in daylight. Even on overcast days, sunlight is ten thousand times brighter than the brightest artificial lighting. Therefore we can easily see all objects relevant for navigating on the road. At night-time, however, the situation is something else: the performance of our eyes decreases to 5% of the daytime performance. That is to say many objects relevant for navigation cannot be perceived in darkness. All the more good visibility of road markings is essential as these "simple lines on the floor" indicate the course of the road.

If we cannot see the white lines well, we start to feel insecure and focus our whole attention on them which would also be important for other things: dangerous situations could be detected too late.

Good visibility of road furniture, mainly good visibility of road markings is therefore not a question of prestige or luxury; it is a crucial factor in ensuring traffic safety.

Good road markings are designed to reflect the light of a vehicle's headlights in the driver's direction; this is called retro-reflection. It can be achieved for example by embedding small glass beads in the marking material.

However, in a similar way as the road surface itself, the markings suffer considerable wear and tear through the constant overrunning by vehicles. Gradually, the glass beads will be detached and the retro-reflection, i.e. night visibility, will deteriorate more and more.

Therefore, it is recommended to check the quality of road markings road-wide at regular time intervals.



This can be achieved by using a retroreflectometer: an optical measuring device which measures the night visibility of the road marking from the driver's perspective:

The marking is illuminated with a light source similar to a vehicle's headlights; an optical sensor stands in for the driver's eyes. A reproducible objective measuring value can be taken within seconds.

Minimum requirements for the performance of road markings are standardized in national and international standards and local regulations, making an objective assessment of the marking easy: with the help of the measuring value it can be decided whether the marking still meets the requirements and can be seen well by road users.

Even higher requirements apply for wet road surfaces: a regular marking is often not enough in these situations to guarantee good visibility. If a marking is to be seen in all weather conditions, the use of special markings with enhanced visibility in wet conditions is recommended.

This can be achieved by special profiles which aid the draining of water. The higher parts of the marking protrude over the waterline and are functional. Another solution can be

the use of reflective beads with different optical properties to achieve good visibility both in dry and wet conditions.

The performance of the marking in wet conditions can be checked with the retroreflectometer, too: the road is sprinkled with water and the measurement can be taken after one minute.

Comfortable innovative handheld retroreflectometers offer the possibility of timed measurement so the operator doesn't have to use a stopwatch for wet measurements.

Also other important properties of the marking and its surroundings can be measured with the new retroreflectometer models: the road leveling is important for the draining properties of the marking and an integrated camera can take on-the spot pictures of the marking from the perspective of the measuring geometry, delivering valuable information on glass bead distribution, soiling, abrasion and other factors.

Long distance can be measured fast and reliably with mobile measuring systems, dynamic retroreflectometers. The vehicles travel in the traffic flow at speeds of up to 120 km/h without impeding traffic. Measuring values are recorded constantly and



can be evaluated later easily on a PC or laptop on a digital map or on a spreadsheet complete with a photographic record.

This area-wide analysis method offers the advantage of a great overview of the marking condition and enables the systematic and intelligent application of maintenance management methods. The budget will only be used in areas where it is necessary and the quality of the marking – and with it also traffic safety – can be improved in the long run without spending more money. ■

#### About Zehntner GmbH

For more than 40 years Zehntner has been developing and producing high-quality electronic and physical measuring and testing instruments for the road sector which are well-known and used world-wide. Zehntner always implements innovative visions and latest technologies in a fast and efficient manner to meet current and future customer requirements. [www.zehntner.com](http://www.zehntner.com)

من السهل العثور علي الطريق في وضح النهار. حتى عندما تكون السماء مليدة بالغيوم يكون ضوء الشمس الذي يتجاوز طبقة الغيوم عشرة آلاف مرة أقوى من ألمع إضاءة إصطناعية، لذلك يمكننا أن نرى بسهولة كافة إشارات السير. أما في الليل فيختلف الأمر إذ ينخفض أداء أعيننا بنسبة ٥ ٪ مقارنة مع النهار فيصبح من الصعب علينا رؤية هذه الإشارات. تسمح علامات تحديد الطريق الجيدة والتي تخضع لصيانة دورية بتأمين رؤية دائمة للسائقين محافظة بذلك على السلامة بشكل عام.

## Omani Road Marking Expert: Al Barami Building Materials & Trading



The Road Marking Division of **Al Barami Building Materials & Trading LLC** in Muscat is a major road marking applicator in the region, having successfully completed innumerable road marking projects in the Sultanate of Oman. This division has over several years of experience and has constantly maintained its reputation for quality, workmanship and timely completion of projects. Equipped with state of art machinery and highly experienced technical work force to meet any challenges in the field of road marking even at difficult terrains. The division continues to maintain its status as a market leader in a highly competitive line of business without compromise on quality. There is continuous effort to improve the road marking system and technological breakthroughs include adding reflectivity, increasing longevity and lowering installation costs.

Thermoplastic paint applied to asphalted and concreted roads for guidance and safety purposes. The paint consists of quick-drying hydrocarbon resins plasticized with mineral oil, light-colored calcium carbonate, pigments and reflective glass beads. The melted thermoplastic paint (200-220°C) can be applied either by special spraying machines, screening machines or manually. Thermoplastic paint can be applied on asphalt surfaces. The company also handles cold paint application.

- Airport Marking: Runway marking with Thermoplastic materials Center line, Edge line, Threshold bar 1800 mm, Touchdown bar, Taxi way, Letters & Numbers, Airport Premises Parking, Roads Directional Arrows, Warning lines, Informative lines, etc. Internal Roads /Diversion /Overpass, Roundabout, Flyover, Single Carriageway, Double carriageway, Center line, Edge line, Junction type "A" , "B", "C" Directional Marking, Warning Lines, Informative Lines

- Road Buttons: These ceramic buttons are fixed on the center line in place of lines. They are mainly used in the tropical places.

- Road Studs: Reflective aluminum or plastic objects fixed on the surface of the roads for night guidance and safety purposes. Aluminum Road studs, Plastic Road Studs & Speed breaker (ceramic type).

- Traffic Sign Board: Reflective sign boards located on the sides for directive and informative purposes. Three types of Signboards: Warning signs, Regulatory signs and Informative sign.

- Guard Rails: Steel barriers fixed on the side of the roads especially on curves and slopes for preventing vehicles from riding out from roads. Elements of Guard rails are Guard rail beam, Posts, Terminal and Accessories. ■



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# A New Option for HVDC Power Transmission across the MENA

By Roger W. Faulkner and Harry Valentine

**E**lpipe technology involves polymer-insulated underground HVDC conductors designed for higher efficiency and capacity than is practical for overhead power lines. We do not yet have working prototypes of this technology, but the principles are very well understood, so that accurate cost estimates are feasible. No fundamentally new engineering principles will be required for implementation. For a 500-800kV DC elpipe, the design basis is 1% I<sup>2</sup>R loss per 1000 km, about three times better than an overhead 800kV DC line, which is the present state of the art for long distance transmission. These losses are similar to "high temperature" superconducting (HTS) lines after accounting for the energy HTS lines consume for cryogenic cooling. Elpipes are not wrapped on a reel for transport and therefore can use far more conductive material than cables or overhead power lines, typically 3-60 times more than in an overhead transmission line. Elpipes in their simplest embodiment (Figure 1) are fully underground, and resemble a pair of side-by-side gas pipelines or pipe-type cables. It is possible to go to higher capacity (Figure 2) by using a surface mount design for more efficient heat dissipation; however to go beyond about 25 GW (four times more capacity than any current transmission line) would require internal active cooling.

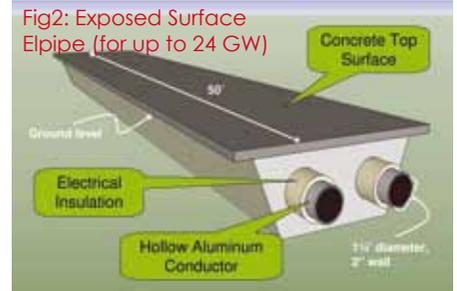
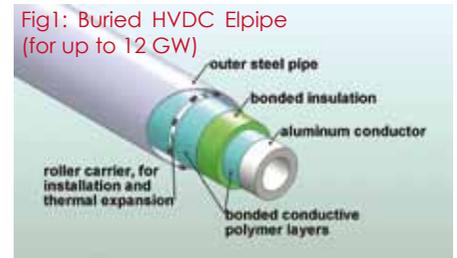
Elpipe technology can be applied across the Middle East and North Africa (MENA), where governments have discussed connecting national electric power grids and developing new international railway lines. Rail lines and elpipe technology can both share the same right of way and benefit from reduced construction costs. The Gulf Cooperative Council has begun to implement plans to connect electric power grids along the coast of The Gulf while energy sector officials in Saudi Arabia speak of developing a solar-electric energy sector in their economy. There has been ongoing research in Egypt about developing the Qattara Depression into a salt water pumped storage project, whose pumped hydraulic storage capability would serve Egypt and possibly a larger region. The DESERTEC Foundation has been promoting the concept of a massive project to bring MENA solar electricity to Europe, as has Peter Meisen for many years, through Global Energy Network International, "GENI". Figure 3 is a layout for a single HVDC "supergrid" system to tie together the entire MENA region and Europe, prepared by GENI. The HVDC link-ages envisioned in Figure 3 can be of several types, but in order to form a true HVDC grid, it is important they employ a single design voltage since there is no economical DC/DC voltage transformer available (discussed in more detail later; common voltage will probably be between 600-800kV). Some of the links shown in Figure 3 will

be based on elpipes, and some will be overhead lines, underground or subsea cables, or gas insulated lines (GIL). The highest capacity, longest-distance lines will tend to be elpipes. Elpipes could make it feasible to export hundreds of GW to Europe from MENA (additional circuit breaker development needed first).

There are several features of such a grid that are unique to the MENA region, mainly having to do with these special features of the region compared to Europe, North America, or Asia:

- A lot of "associated gas" is flared in the MENA region because there is no logical way to get it to market; this could be used in gas turbines to produce dispatchable power that could be exported via the HVDC link.
- Sandstorms are a major risk factor for overhead power lines in the MENA region; in much of the reason most power is already transmitted underground, so elpipes would not have to compete with overhead lines in these regions.
- The Saudi Arabian desert is 2-3 hours ahead of Europe; Saudi Arabian solar electric power could serve the morning peak power demand across much of Western Europe.

The development of a Southern Mediterranean trans-continental railway line could eventually be extended from Cairo to Saudi Arabia (across the Strait of Tiran), with a possible connection to a future railway extension to Amman and Aleppo. Elpipes can



follow the routes of the trans-MENA railway lines and connect into the European power grid in Turkey; it is not favorable for overhead power lines to follow a railroad, which may at points go through tunnels.

Elpipes would assuage concerns around the aesthetics of overhead power lines, at lower cost than the two viable HVDC alternatives, underground cables and gas insulated lines (GIL). In a sense, all these prior underground HVDC technologies can be considered "electric pipelines." We have decided to use the term "el-pipe" to mean solid-insulated buried or surface mounted conductors with rigid conductors. Elpipes would bypass some of the problems associated with undersea power cables that have been damaged and taken out of service by ship anchors. Elpipes placed next to railway lines would also be easier and less costly to install, access and maintain than undersea technology.

### Exporting MENA Power

The development of railway lines between The Gulf and Istanbul would provide an opportunity to install parallel elpipe HVDC lines from the MENA and into the European power grid, eventually on the grand scale envisioned in Figure 3. Saudi Arabia will likely lead the MENA in developing mega-scale solar electric power generation for export into Europe during the AM peak period, if a redundant HVDC connection is installed. The same technology could be used to connect across Southern Iran and Southern Pakistan into India and China. (China has already indicated the benefits of a trans-Asia natural

gas pipeline across Southern Pakistan and Northern India, and both nations appear willing to cooperate on some economic matters.) If MENA is connected to India and China, MENA solar energy would be well-synchronized to the peak air conditioning load in India, and to the evening peak load in coastal China, Korea, and Japan. Elpipe HVDC lines could be installed underground next to railway lines that connect across Iran and Pakistan into India, or duplicate the route of the proposed natural gas pipeline. The potential to install underground elpipe technology next to railway lines between Saudi Arabia and Istanbul would likely lead to the development of solar energy and wind energy resources in the Northeastern Sahara region. Such development could help develop the Qattara Depression for oceanic hydroelectric power generation and pumped hydraulic energy storage.

Cost-competitive wind and solar energy technology will likely form the basis of a future, renewable energy based economy across the MENA. Reliable, efficient and cost-competitive long-distance elpipe HVDC power transmission technology would carry the energy from the MENA to markets across Europe and perhaps Asia. Elpipe technology would likely become one of the competing transmission technologies upon which a future economic sector of the MENA would depend.

### Elpipes: Technical Considerations

Passive waste heat removal limits steady state capacity for any fully buried transmission line based on conventional conductors. For buried, truck-transportable HVDC cables, waste heat dissipation limits maximum transfer capacity to about 1.1 GW per circuit at present, though anticipated cable insulation improvements could take this up to about 3 GW per circuit in the next ten years. Elpipes use 3-12 times more metal/ampere, and so have higher efficiency than an overhead wire or a buried cable (reducing waste heat production proportionately), so that even with current insulation technology, a buried elpipe circuit would be capable to 12 GW. An elpipe installed at the surface (to make dissipation of waste heat easier), could go to at least 24 GW with passive cooling. Active, non-cryogenically cooled elpipe designs can go to transfer capacities above 200 GW.

(Such high capacities would require additional circuit breaker technologies that are yet to be developed.) Because of their massive design, elpipes have high adiabatic overload capacity. In a typical all-aluminum elpipe design, the adiabatic heating of an elpipe from normal operating conditions (85oC) to thermal overload (105oC) would require 2.5 hours at double the normal level of transmitted power, about 15 times as much overload capacity as typical underground cables.

### Design Voltage of Elpipes

Elpipes are envisioned as future components of a continental scale HVDC grid that will lie "below" the AC grid. Selection of an operational voltage for such a grid involves many considerations. Figure 4 shows the cost of conductor + insulator for three candidate conductors, copper, aluminum and sodium, all with crosslinked polyethylene (XLPE) insulation with maximum voltage gradient of 10 kV/mm. The curves of Figure 4 show that the more expensive the conductor is, the higher the optimum operating voltage (sodium:  $\pm 500$  kVDC; aluminum:  $\pm 800$  kVDC; copper:  $\pm 1,250$  kVDC). Note that both transmission capacity and efficiency were held constant in Figure 4 (at 10 GW and 1% loss/1,000 km), and at any particular voltage the outside conductor radius is the same for copper, aluminum, or sodium.

A CIGRE committee has been studying the problem of what common HVDC voltage should be adopted for continental scale HVDC grids; one key consideration is the ease of interfacing with existing AC grids. It is likely that the selected design voltage will be between  $\pm(500-800)$ kV, possibly  $\pm 640$ kV.

### Insulation of Elpipes

Insulation for elpipes need not be flexible, as is required for cables. This opens up particularly interesting options for elpipe insulation that cannot be discussed at this time due to patent considerations. For Figure 4, we assumed the insulation is XLPE that has a design-basis ("working") breakdown strength of 10 kV/mm, and a maximum continuous operating temperature of 85o C.

### Thermal Expansion of Elpipes

A side effect of going to rigid conductors as in an elpipe is that one must

deal with the different thermal expansivities of the conductor, the insulator, and the pipeline shell. Various prior art means to deal with this problem include:

- Bellows-type expansion joints (can be used on conductors, insulators, and the conduit);
- Sliding electrical contacts have been used for rigid conductors in gas insulated lines;
- Bonding elastomeric insulation to the metal conductor to restrict axial expansion;
- Using wires within a structural shell that can "snake" as they expand;
- Using flexible conduit pipe, such as polyethylene pipe, that is poured into concrete, and works as conduit without the need for separate conduit expansion joints.

The preferred method for how we propose to deal with thermal expansion cannot be discussed in detail at this time.

### Cooling Options

Elpipes can be much more massive than cables because they need not be wrapped on a reel for transport. Because of this, elpipes have a "cooling" option that is not feasible for high power cables: one can simply use more conductor to reduce I<sup>2</sup>R heat generation in the first place. (As long as the elpipe is DC, there is no dielectric loss also generating heat, as would be the case if AC were used.) The larger conductors of course produce higher efficiency, too. Although a lower capital cost might be had by using smaller conductors with an active

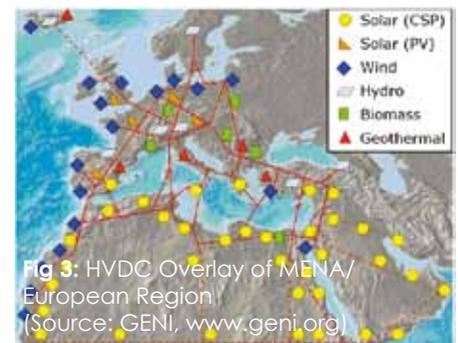
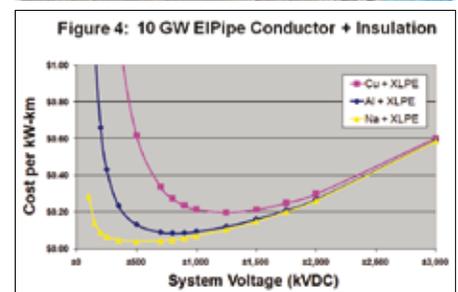


Fig 3: HVDC Overlay of MENA/ European Region  
(Source: GENI, www.geni.org)



cooling system, higher losses would increase operating costs, and added complexity would reduce reliability. In a passively cooled elpipe, the electrical insulation is a major part of the "thermal resistance" between the elpipe conductor and the environment. If the elpipe is at the surface, or buried only shallowly, the electrical insulation represents most of the thermal resistance to dumping waste heat into the environment passively, whereas at some burial depth (that varies with pipe diameter and soil type), the soil thermal resistance becomes even greater than that of the electrical insulation material; thus elpipes cannot be deeply buried unless a means to bring the waste heat to the surface, such as heat pipes (passive) or liquid coolant pipes (active) are part of the design. At the typical elpipe design efficiency (1% loss per 1000 km at full rated load), I2R heat generation is 10 watts/meter per GW capacity, considering both wires (leakage current heating is much less for an XLPE-insulated elpipe than I2R heat generation). Present generation buried high power cables have thermal limits between 40-70 watts per meter per cable (up to 140 watts/meter for both cables); we have conservatively estimated that a fully buried elpipe circuit (a pair of elpipes as in Figure 1) can dissipate sufficient heat to transport 12 GW (120 watts/meter).

### HVDC Grid Considerations

So far, commercial HVDC lines are point-to-point linkages, and in most cases power is transformed from AC to DC and back by highly efficient thyristor-based line commutated converter (LCC) stations. LCCs require highly coordinated control of power in/power out for each converter station, and as a result, most experts do not think that a true HVDC grid (with more than six power taps) can be built based solely on LCCs. LCCs also do not have "black start" capability, so the lines can only be restarted once the AC grid is operational in the case of a major blackout. More recently two types of "voltage

source converters" (VSC) have been commercialized for power transmission, GTO (gate turn-off thyristor) and IGBT (integrated gate bipolar transistor). VSCs are much more capable of being deployed in a true HVDC grid (with hundreds off power taps) than are LCCs (though this is not yet demonstrated at grid scale). Unfortunately, VSCs are less efficient (~5% conversion loss for two IGBTs vs. ~1.2% loss for a pair of thyristor-based LCCs; GTOs are intermediate in efficiency). A mixed grid, with both VSC converters and current source converters is feasible and will be a likely design for the HVDC grid of the future; such a grid will be capable of having more power taps than a purely LCC-based grid because of the presence of VSCs in the grid, yet the bulk of power transfers occur through the more efficient LCCs. This is implied by the many-terminal conceptual HVDC grid of Figure 3.

Present plans for HVDC regional interconnections worldwide use individual HVDC lines as point-to-point connections. Thyristor-based LCCs can have up to six power taps, and only form a regional network insofar as the AC grid interconnects the HVDC lines to some extent. Contrast this with the true HVDC network envisioned in Figure 3, which can move power from any power tap to any other tap; there would be on the order of 50-100 power taps on the HVDC loop of Figure 3, which would tie together areas with hundreds of GW of power production and consumption. The proposed HVDC grid would lie "below" the conventional AC synchronous grids in the region, and would reinforce them. The highest capacity circuits would be elpipes (the largest and most efficient option), and would be connected to smaller underground cables, and/or overhead lines carrying 2-6 GW (not differentiated in Figure 3). Short sections of GIL will be incorporated as well, as in the current grid.

### Installation Options

Elpipes can be installed in several different ways. In principle, a bipolar cir-

cuit can be installed in a single pipe for example. We have rejected this option due to the likelihood that a short in one conductor would damage the insulation of the other conductor, so that either both legs fail at once, or during maintenance both legs of the circuit would have to be shut down. To minimize magnetic effects near an elpipe, it would be highly desirable to have a coaxial relationship of the + and - conductors, but this complicates field repairs, expansion joints, and cooling tremendously, and has been rejected for now (this remains a possibility in the future). For now, we are pursuing designs (Figures 1 & 2) in which each conductor resides in its own shielding conduit, which may be either metallic or a polymer-based pipe. For added redundancy, it is highly desirable for the shielding pipes to be able to handle ground return currents in case one leg of the HVDC circuit is lost.

### Conclusions

The proposed system represents a paradigm shift for power transmission in several ways. First is the obvious movement from wires to solid conductors, "electric pipelines." This is an unavoidable consequence of the need for increased power transfer due to many factors, including deregulation of the power market, increased use of wind and solar energy, reduction of greenhouse gas emissions, increased power consumption, and increased sensitivity to the environmental and aesthetic consequences of overhead power transmission. ■

Article prepared for Arab Construction World by Roger W. Faulkner, Electric Pipeline Corporation (roger@elpipe.com) and Harry Valentine (harryc@ontarioeast.net)

### About Electric Pipeline Corporation

Electric Pipeline Corporation (EPC) was formed in November 2009 to pursue business development of HVDC elpipes for long distance underground power transmission. We are now in discussions with three major strategic investors in this area to obtain initial funding.

تقوم تكنولوجيا الأنابيب الكهربائية المعروفة بـ [إيلبايب] على موصلات للتيار الكهربائي المستمر العالي الفلطية معزولة بالبوليمر وممدودة تحت الأرض. مصممة لتوفير فعالية وقدرة أعلى مما توفره التمديدات الكهربائية فوق الأرض. لا يوجد بعد نماذج عمل لهذه التكنولوجيا لكن المبادئ مفهومة بشكل جيد كما يمكن تقدير الكلفة بشكل دقيق. هذا وليس هناك حاجة إلى مبادئ هندسية أساسية جديدة لتطبيق هذه التكنولوجيا. لا تلف الإيلبايب على بكرة لكي تنقل وبالتالي يمكنها الإحتواء على كمية أكبر من المواد الناقلة للكهرباء مقارنة مع الكابلات التقليدية أو خطوط الكهرباء العامة. يتم عادة مد الإيلبايب تحت الأرض وهي تشبه أنبوبي غاز أو كابلات أنبوبية يجريان جنباً إلى جنب. كما يمكن زيادة القدرة عن طريق تصميم سطحي يتمتع بفعالية أكبر في تبديد الحرارة، إلا أن تجاوز عتبة الـ ٢٥ غيغاواط يتطلب تبريد داخلي نشط. يمكن تطبيق تكنولوجيا الإيلبايب في منطقة الشرق الأوسط وشمال أفريقيا حيث ناقشت الحكومات الوطنية ربط شبكات الطاقة الكهربائية وتطوير خطوط سكك حديدية دولية جديدة. هذا ما تناقشه هذه المقالة التي زدنا بها السيد روجر فولكنر من شركة - إلكتروك بايبلاين كوربوريشن - بالتعاون مع المهندس هاري فالنتين.

## Doosan Introduces New Synchronization Option for Its Generators

Doosan Infracore Portable Power (DIPP) has launched the new AGC200 synchronization option for the G250, G400 and G500 PowerSource generator models. DIPP worked closely with DEIF, a market leader in generator control systems, to develop the new synchronization feature with the aim of making the system the best available on the market.

Combined with the reliable Cummins engines and Leroy Somer alternators on the Doosan generators, the synchronization feature will allow specialist generator rental companies to manage and optimize generator fleet modularity and thereby increase utilization rates.

The new AGC200 synchronization panel, as standard, allows the following working modes: Single generator in island; Island generator synchronization; Auto mains failure with back synchronization; Fixed power (Base load); Mains power export; Load take-over; and Peak shaving.

A switch on the back of the synchronization panel is used to select the desired mode. In addition to the operating modes, two additional options linked to the new controller are dual frequency 50/60 Hz capability and a full power management module to optimize fuel consumption.

The AGC200 synchronization controller is compatible with the newest AGC3 management software through CAN



bus communication. The analogue load sharing lines also allow users to synchronize with non DEIF branded controllers. This capability offers the widest application coverage for rental companies.

The G250, G400 and G500 are the three largest models in the PowerSource generator family, which comprises 12 mobile and portable generator models with prime power outputs at rated speed from 10 to 500 kVA.

The PowerSource generators are equipped with advanced state-of-the-art, Stage 2 Emission Compliant engines ensuring the optimum mix of performance, fuel economy and low emissions. Thanks to the high-capacity onboard fuel systems, the PowerSource generators can run for at least 24 hours, without refuelling, ensuring uninterrupted power for critical applications. ■

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## Ducab Hosts Abu Dhabi Networking Event for Key Construction & Utilities Clients

On June 27, **Ducab**, the leading manufacturer of power cables in the Middle East, welcomed more than 250 professionals from across the UAE construction and energy industries to 'Abu Dhabi Connected', a networking event which took place at the Yas Island Rotana Hotel to encourage discussions about ways in which UAE companies can meet the energy demands of an ever growing—and diversifying—construction industry. While focusing on Ducab's strong manufacturing presence in the UAE capital, the event saw many of the region's most influential contractors, consultants, project directors and senior engineers share Ducab's perspective on how the emirate's latest projects will unfold as the Abu Dhabi government continues to pursue its Economic Vision 2030. Ducab itself has been active in

the Emirate for many years, and since 2001 has been managed as a 50/50 joint venture between the Governments of Abu Dhabi and Dubai. *Andrew Shaw*, Managing Director of Ducab, said that the company's Abu Dhabi partnership has contributed greatly to the development of both the company and the local economy. Such ventures have increased substantially during the past two years as Ducab opened its third cable manufacturing facility in Industrial City of Abu Dhabi (ICAD). Currently, over 60% of Ducab's capacity is manufactured out of Abu Dhabi as three out of the five Ducab facilities are located there. Although the last 18 months have been a tough period for the regional construction industry, Shaw said that the Emirate has shown enor-



mous dedication to building a society based on both environmental and economic sustainability, with the local supply of resources and expertise adding significantly to the maintenance of healthy market conditions. Ducab has been supporting infrastructure development in Abu Dhabi by supplying cables to some of the Emirate's most recent landmark projects, including Yas Marina Circuit, Reem Island, Emirates Palace and a Green Diesel project with Takreer. ■

## Zurich Global Energy Targets Middle East's Power Generation Sector for Future Growth

**Zurich's** Global Energy group has announced the expansion of its market capacity for Power Generation business in the Middle East. The unit will increase line size from \$100 million to \$250 million capacity for the Power Generation segment of its Onshore Property line of business, which will allow Zurich to assume a larger share of power generation operational risks. This increased capacity will be available globally, through Global Energy's network of regional offices in North America, Europe, the Middle East, Asia Pacific and Latin America. *Michael Morgan*, Regional Manager of Zurich Global Energy in the Middle East, said: "The increasing number of alternative and renewable energy projects across the GCC, shows that this market is experiencing considerable change. Expanding our market capacity to \$250 million for power generation risks will allow us to remain responsive to the changing needs of

brokers and our local insurance partners in the region by providing risk transfer options that best suit each individual risk. This is a significant development for us here in the Middle East where the energy industry is so pivotal to the economy." The expansion of market capacity represents the latest development in Zurich Global Energy's aggressive growth plan for 2010. "We are seeing increasing demand for higher capacity in the region due to new growth, plant expansion and the emersion of new technology in the utility markets," said *Saad Mered*, CEO, Zurich Middle East. "The increase in our Power Generation capacity combined with the specialized energy expertise of our locally based underwriters and risk engineers, mean we are well positioned to attain a leadership role in the market and service the unique needs of this dynamic energy segment."



Zurich's Global Energy group provides property and casualty risk solutions for companies involved in the oil and gas, petrochemical, refining, mining, power generation and utility markets. ■

# MATERIAL HANDLING & PROCESSING



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# Rise in Global Demand for Material Handling Systems

**P**ower, mining and manufacturing industries are driving up demand for material handling systems that enable them to reduce inventory levels and improve order to delivery cycles. Material handling systems help companies cope with buying cultures that are in a continuous state of flux. Whatever the process may be, material handling plays a crucial role in its overall success. Internationalization and globalization are propelling competitiveness and driving the development of newer and efficient material handling technologies in the market, according to a new analysis from Frost & Sullivan titled *Advances in Material Handling Systems*.

The report said that the most common trend in the material handling industry today is to build material handling equipment that is smaller yet smarter. Apart from this, material-handling equipment is being incorporated with immense electronic intelligence in the form of touch screen interfaces, distributed control functions that obviate the need for bulky control panels, upgraded software, and many more features.

"Once considered a total in-house operation, material handling is now being done by third party logistic (3PL) providers," notes Technical Insights Research Analyst Menaka S. "Cross-company collaborations have increased with integrated supply chains and concurrent movement of goods and information."

Economic trends and the performance of the construction, power, and manufacturing sectors are major factors affecting the dynamics of the material handling systems market. The developing economies of India and China, in particular, hold enormous potential for the market owing to the high economic growth rates and the burgeoning industrial products and consumer goods sectors. Growth in the thermal power sector will spike demand in the market for coal handling equipment.

"It is anticipated that coal demand, primarily for its use in utility power stations would keep demand levels buoyant," elaborates Menaka. "Huge proportions of the mining industry's operations, such as coal mining, heavily depend on the use of specialized bulk material handling equipment. This equipment is primarily meant for moving raw material to various locations and thereby maintaining operational efficiency levels." In Africa's Richards Bay Coal Terminal (RBCT), a variety of bulk material handling equipment is used. Apart from the demand in existing coal plants, a number of new coalfields in Mozambique, Namibia, Zimbabwe, Zambia and Angola are also propelling the use of material handling equipment. The task of implementing a successful warehouse is posing



a big challenge as it involves a proper balance between a variety of conflicting objectives including increased picking speed combined with flexibility, organizational flexibility combined with effective space utilization, and increased throughput at decreased labor cost. With the current economic conditions, many companies are deferring investments and following a wait-and-watch approach. Others are working toward actively pursuing lean practices, continuous improvement, and just-in-time production systems.

"In order to reduce complexity in material handling operations, warehouses are deploying integrated warehousing that is capable of handling thousands of varieties of stock keeping units (SKUs), while reducing the overall complexity in customer delivery and distribution," says Menaka. "The resultant complexity in market segmentation has also enhanced the need for stringent tracking and tracing of product movement, which is also effectively done through the deployment of handling equipment."

Going forward, green initiatives are poised to pick up steam in the material handling industry. Industrial practitioners are displaying a preference for environmentally responsible material handling systems that reduce emission levels and produce less noise. To ensure greater uptake of material handling systems, new technologies must be developed to ratchet down costs and improve ROI. Greater investments in research and development, and faster innovation rates are utmost necessities for the industry.

## The Middle East

According to Frost & Sullivan, the developing economies of India and China are expected to lead the material handling market's much-awaited revival, followed by Middle Eastern countries such as Saudi Arabia, Bahrain and the United Arab Emirates. The forecast will undoubtedly be welcomed with open arms by local trade suppliers, who have suffered to varying degrees from the cautious spending habits of clients in the regional logistics industry.



Stewart Arbuckle, managing director of Dubai-based warehouse solutions specialist Loc8, believes that a growing number of companies in the Middle East will invest in upgrades to their material handling solutions this year, moving away from the common 'wait-and-watch' approach of 2009.

"Last year's sudden crisis did have an impact on the market, leading to a period of flat demand, although this was related to buyers adopting a more cautionary approach than normal to expenditure," he reasons. "That attitude has started to change now and we're noticing a return in confidence. According to Emirates Industrial Bank, resurgent growth in the UAE economy is forecast at 5%, based on non-oil expansion and the expected increase in oil prices and crude output."

Arbuckle's opinions are supported by the results of Logistics Middle East's first readership survey on the material handling sector, which questioned around 250 senior professionals from the industry about their purchasing habits. In total, 91.4% of respondents stated their companies were planning to spend on material handling products

such as forklift trucks, pallets and warehouse racking in 2010. Approximately 64.3% would purchase these solutions exclusively from the Middle East, while the remaining amount was planning to source from both the Middle East and other global markets.

Such demand is expected to drive the development of 'smaller but smarter' material handling technologies, according to Frost & Sullivan, with an appealing range of modern functions, such as touch screen interfaces, upgraded software, and distributed control functions, which obviate the need for bulky control panels. More specifically to the Arab world, 58.7% of respondents to Logistics Middle East's survey were considering an investment in automated storage, based on the belief that warehouse automation would eventually become commonplace. The remaining 41.3% stated that automation was a possibility for their future operations, although not suitable at the moment. ■

#### Source

Frost & Sullivan,  
[www.frost.com](http://www.frost.com)

تقوم قطاعات الطاقة والتعدين والتصنيع برفع الطلب على معدات التصرف بالمواد التي تمكنهم من تخفيض مستويات المخزون وتحسين العمل المنظم على مستوى دورات التسليم. تساعد هذه المعدات الشركات على التعامل مع الثقافات الشرائية التي تشهد حالة مستمرة من التدفق. مهما كانت طبيعة العمل تلعب معدات التصرف بالمواد دوراً حاسماً في نجاح هذه الشركات إجمالاً. يقوم التدويل والعولمة بتعزيز القدرة التنافسية ودفع عملية تطوير تكنولوجيات جديدة وفعالة للتصرف بالمواد. من المتوقع أن تقود الإقتصادات النامية في الهند والصين الفورة الجديدة في سوق معدات التصرف بالمواد، تليها دول الشرق الأوسط مثل المملكة العربية السعودية والبحرين والإمارات العربية المتحدة.

## Introducing Cemen Tech's MCD6-100 Hook Lift System



**Cemen Tech**, the world's largest manufacturer of volumetric mixers has recently announced the delivery of its new hook lift system which was recently delivered to the Missouri State Department of Transportation.

The Cemen Tech MCD6-100 Hook lift is designed to allow the truck chassis to transport and deliver concrete using the Cemen Tech MCD6-100 body. The system is designed to carry the materials necessary for concrete production in separate compartments and then measure them out at the job site with pin point accuracy. This enables end users to produce fresh high quality concrete in the exact quantity and specification required.

When The Cemen Tech MCD 6-100 body is not needed it can be quickly unloaded or detached from the truck using the hook lift system and thus freeing the chassis to perform other work.

Cemen Tech, with over 40 years of experience, is the world's largest manufacturer of volumetric proportioning and continuous mixing systems. ■

## Lumiglass Nearly Doubles Laminated Glass Capacity

**Lumiglass Industries**, a subsidiary of **Glass LLC**, has nearly doubled its production capacity of laminated glass with the installation of a state-of-the-art pre-laminating unit from **Benteler AG**, the Germany-based global automotive supplier.



Lumiglass is one of the largest manufacturers of laminated safety glass in the Middle East. With the installation of the new pre-laminating unit - the largest machine of its kind in the region - the company's laminated glass production capacity has increased to 35,000 square meters per month, which is nearly twice its previous capacity.

"In adding this state-of-the-art machine to our equipment line-up, Lumiglass increases its laminated glass capacity by almost 100% at a stroke," said **Sultan Al Zarif**, General Manager of Lumiglass Industries. "The new machine will help us meet the rising demand for laminated glass, and allow us to boost our competitiveness by delivering superior quality, low-emission laminated glass products."

The new pre-laminating unit can produce laminated sheets with areas of 2,600mm in width, 5,500mm in length, and approximately 4mm to 100mm in thickness. It is designed to handle soft coatings, low-emission glass, temperable glass, and photovoltaic solar cells, among others. ■

## Eliminating Settlement Ponds with MATEC Equipment



**MATEC In America** has recently introduced revolutionary dewatering technology to North America. The MATEC line of water treatment equipment has enjoyed great success world-wide with hundreds of installations, for the express purpose of cleaning up and recovering up to 90% of the washwater, and eliminating settlement ponds at quarries, mines and other aggregate facilities. Washwater and settlement pond problems facing today's aggregate

producers and mines include issues with conservation, zoning, environment, EPA flyovers and fines, water restrictions, high pumping costs, tying up real estate and the high cost of maintaining the ponds, including excavator and drag-line issues for dig-out. Overcoming these problems lies within the heart of the MATEC System, the only HPT High Pressure Filter Press and decanter-style Clarifier.

Besides having a small footprint, the system has dramatically lower maintenance costs than any other methods of water recovery or dewatering, and essentially has no moving parts. The end result is a super-dry dirt cake that is so dense and so dry (80%+ solids), it can easily be stockpiled and sold as a desirable product for landfill cover or other purposes; the dirty water is cleaned, and as much as 90% of the water is recycled back into the process. ■

## New Hydro-Clean™ Removes Contamination, Saves Water



The new Hydro-Clean™ washing unit from **W.S. Tyler** effectively cleans deleterious material from aggregate, industrial minerals and metals while reducing water consumption by up to 75 percent over traditional log washers. Taking a maximum feed material size of up to six inches (150 mm) into its vertical drum, the Hydro-Clean employs high-pressure nozzles, rotating at 90 rpm, to spray up to 90% recycled water on the material with pressures up to 2,900 psi (200 bars).

The washing unit removes silt and clay particles as small as 63 microns from mineral mixtures and, with its short retention times, can process up to 400 TPH (400 tons), depending on model size and application. Due to its compact size and weight, overall operating and structural costs are considerably lower than with traditional washing systems—which also require more equipment and a greater footprint. A traditional washing system can require up to three screens along with a log washer or screw. With a Hydro-Clean unit, the producer only needs an additional wash screen for the Hydro-Clean's discharged material.

Ontario-based W.S. Tyler is the only company in the world that provides premium screening solutions encompassing the complete screening circle of particle analysis, screening media, vibrating screens and process equipment, and complete production analysis, service and parts support. ■

## Stone Adds Larger Mud Buggy™ Model

**Stone Construction Equipment, Inc.**, a global leader in design, manufacture, and marketing of construction equipment, has added a 0.59 cu. m mortar buggy to the Stone Mud Buggy™ line—the SB2100. The additional Mud Buggy model has a load capacity of 1,451 kg with the versatility of a walk-behind or ride-on machine and is powered by a 9.7 kW (13 hp) Honda engine. It easily moves concrete, mortar, gravel, dirt, debris and more around the toughest job sites. The model has many of the same innovative and patented features of the 0.45 cu. m SB1600 buggy including among others:



lowing increased maneuverability in confined areas. It features an extra-large, patented platform-mounted service brake for added safety and a lower center of gravity for added stability and extra traction over rough terrain.

- The one-piece, lift-away polyethylene engine cover requires no tools to remove and can be lifted away for full access to the engine compartment without dumping the tub.
- The patented lockable, fold-up operator platform is contoured, al-

- A large 30-L (8-gal.) fuel tank provides longer run times while the 26-L (7-gal.) removable hydraulic tank allows for cooler running.
- Handlebar-mounted levers control speed and direction. Left-hand side controls reverse and right-hand side controls forward. ■



## Genie Launches Two New Rotating Telehandlers

Genie has announced two new rotating telehandlers ideal for the rental market: the GTH™-4016 SR and the GTH™-4018 SR. These new Standard Rotating models are the latest additions to the world-class line-up of Genie® telehandlers. The telehandlers are highly versatile machines, designed for lifting and placing heavy loads in rental applications.

"These high-reach, rough-terrain telehandlers have a rotating turret that can be used to handle the load without having to reposition the entire machine, helping operators save time" said Dave Gillrie, Global General Manager for the Genie® telehandler product range. "We have engineered every detail on these new models for simple, streamlined maintenance. No matter which model you choose, you will get a robust, rental-friendly machine that's simple to operate and maintain over

years of demanding use."

The GTH™-4016 SR model has a maximum lifting height of 15.42 m, a maximum lift capacity of 4000 kg and can deliver an impressive lift of 700 kg at a maximum forward reach of 13.35 m. The GTH™-4018 SR model has a maximum height of 17.54 m, a maximum lift capacity of 4000 kg and can lift up to 500 kg at a maximum forward reach of 15.53 m. With an excellent lifting capacity and horizontal reach, these models are ideal for many applications and can lift substantial loads such as steel, masonry, and bricks around the worksite. With the choice of adding attachments according to working needs, there are a wide number of options available; making these machines an excellent value for the money.

A dedicated stability control system is standard on all Genie® telehan-



dlers, with a hydraulic accumulator to smooth out shocks while operating the boom. The machines also have three steering modes: front-wheel, crab and coordinated, along with a powerful 74 kw Perkins engine which enhances their manoeuvrability on rough terrain. ■

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## Advances in Access Control

### Have More to Do with Software than Hardware Issues

By Lee Copland \*

**T**he acceleration of the utilization of IP as the preferred method of communication and transmission has created opportunities for the interaction of logical and physical security with Access Control at the heart of this convergence. Security has historically been considered a grudge purchase. In recent years however there has been a more positive attitude taken by forward thinking companies who are aware that an effective security solution should be part of a holistic approach to the efficient operation of a business. An integrated security solution where all the component parts interact, can in fact deliver so much more than just deterring or detecting unwanted visitors.

A study by the School of Information Management and Systems (SIMS) at UC Berkeley, estimated that 92% of the information created by business today is 'born digital' i.e. it is created and used electronically without any physical source record. Securing this information is of course just as important as securing a company's physical assets and not surprisingly therefore, there has been a great deal of interest in what is being called the convergence of physical security and information security.

What is meant by convergence varies widely, ranging from relatively simple incorporation of IT security monitors into physical security infrastructures to very sophisticated functions such as integrated identity management for both physical and logical access control. Whatever the size of the project however, the overall objective is to create a 'one screen' graphical and information reporting interface.

A key technical driver for this convergence has been the introduction of software that enables the exploitation of all of the benefits that an IP/Network based security solution can deliver. This software provides a framework for integrating access control with many other types of security systems e.g. intruder, fire, CCTV and perimeter protection, as well as facility management systems, so that critical information can be monitored on a single screen. This allows users to see the bigger picture, make more informed decisions and particularly important in the current economic climate, reduce costs whilst maximizing the effectiveness of its operational and security teams. Bringing together critical information about people, property and assets can in fact help a business understand the true cost of their business processes

The recent introduction of open ar-



chitecture security management software has enabled businesses to take full advantage of an Access Control system. In its basic form, an Access Control system has at its core a database of information about people and this information is used by a combination of access control cards, readers and door controllers to verify identification and allow access to authorized staff and visitors. Integrating with ID badging, CCTV and other systems transforms the limited functionality of a stand-alone (albeit online) access control system into a sophisticated management tool to deliver invaluable information not just for security purposes but also, for example, health and safety compliance, process control or workforce optimization.

The high degree of security and control which can be introduced by converging logical security or information security as it is more commonly known, with physical security can be illustrated by the simple example of the unauthorized use of a PC. An access control system can control if and when an employee enters a building and where he or she goes once inside. It can also potentially record when that member of staff logs onto the company's PC network. Unless the two sources of information interact, it will not create an alarm event

if the person goes to lunch without logging off. The risk of unauthorized use of the unattended PC is obvious but could be negated by an alarm being triggered when the member of staff leaves the building or enters the company's restaurant facilities, without logging out of their PC. Including logical and security authorization on a single access control card also negates the danger of the card being left unattended in the PC card reader as the member of staff will need the card to move to other parts of the building or to regain access.

Another example would be instances where an employee has been downloading or backing-up large amounts of data. This might be a totally appropriate activity but it would be useful to know if it only happens when there are no other colleagues present in that part of the building.

Multi functional Smartcards have become integral to the convergence of logical and physical security. They help raise the level of security but also provide effective password and authorization management as well as offer the potential for improved staff productivity by combining multiple operations on a single card.

#### Access Control and Video

There are enormous business advantages which can be achieved when



there is interoperability between Access Control and CCTV, but until recently the different protocols used by manufacturers prevented this happening. Integrated security management software is now available which makes this objective almost effortless to achieve. It is now possible to integrate access control with any existing CCTV system, regardless of who the manufacturer might be. The life of the existing systems can therefore be extended with no restrictions on the introduction of new technologies.

Access Control and video are the obvious candidates for integration but cost effective software modules are now commercially available which can bring in other security related activities such as automated car number plate recognition (ANPR) for car park management. This provides a robust on-site desktop PC solution which is not reliant on retrieving data from remotely located servers with access controlled by authorized vehicle registration or a driver's ID badge. A dual vehicle and ID badge authentication option matches the driver with the vehicle with pre-registration of visitors possible with time/date and zone control.

For those companies whose security requirements have changed, there is also security management software available which facilitates a wireless locking solution. The new Aperio technology has been designed to allow an easy to implement and cost-effective upgrade of mechanical doors and to wirelessly connect them to existing electronic access control systems, providing end-users with a simple and intelligent way of increasing the controllability and security level of their premises.

### True integration

The interoperability of Access Control with non-security systems can deliver whole range of benefits over and above a company's security requirements. An example of this could be energy usage linked to occupancy, an increasingly important factor as companies look to introduce 'green' policies and procedures. The use of a single software interface will also save time and money by reducing the need for duplicate user interfaces for managing daily schedules, changes and other necessary incremental updates.

The concept of integration is by no means new but the latest generation of security management software has made the possibility of true integration a reality. One of the barriers in the past to achieving the integration of Access Control with non-security systems, such as building management systems, has been the concern amongst installers and system integrators about the time and costs involved and also having to be reliant upon manufacturers in order to deliver customized solutions for individual customers.

The good news is that there is now 'Integrator' software available which puts that process firmly in the control of the system integrator and that very little training is needed to utilize it. A properly designed and implemented Access Control will certainly achieve the basic requirement of limiting access to restrictive areas. The true integration of Access Control with other security and non-security systems can, however, deliver significant operational benefits and the security management software now available makes this possible and affordable. ■

## CyberLock® Intelligence in Electronic Padlocks



**Videx** is announcing the launch of intelligent padlocks that provide electronic access control and auditing. A padlock can be quickly converted into a full-functioning access control system simply by replacing its mechanical cylinder with a CyberLock electronic cylinder. Padlocks retrofitted with these intelligent cylinders are the perfect solution where controlled access and the ability to track lock openings are needed. A full line of CyberLock padlocks with the electronic cylinder pre-installed is also available.

The electronic padlock system consists of the CyberLock padlock that has no keyway to vandalize, a programmable electronic key that cannot be duplicated, and software for managing the system. Each authorized employee's key can be programmed with the specific access permissions they need to do their job: what locks they may open, and when they may open them.

Each time the key opens a padlock, a record is stored in both the lock and the key. This audit reporting of lock openings and exceptions such as attempts to enter can be especially valuable to management when security issues arise. A key can be set to automatically expire within minutes, hours, days, months, even shift-by-shift, depending on the specific task that has been assigned to the user. A missing key can be quickly blocks from opening locks. ■

\* Lee Copland, Managing Director of MAXXESS Systems EMEA

### About MAXXESS Systems

MAXXESS Systems, a leader in traditional access control for decades, has enjoyed considerable success over the last five years with its integrated security management software solutions which provides businesses and organizations with the very highest level of security management. The company offers a straightforward modular approach to integration which, as well as improving operational effectiveness, will also extend the life of existing security systems. [www.maxxess-systems.com](http://www.maxxess-systems.com)

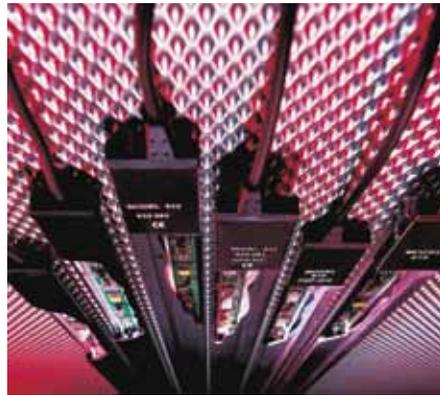
أدى تسارع استعمال بروتوكول الإنترنت كوسيلة مفضلة للإتصال والبيت إلى خلق فرص للتفاعل بين الأمن المنطقي والمادي مع تموضع التحكم بالوصول في قلب هذا التقارب. لطالما تم إعتبار الأمن نوع من شراء للضعيفة. إلا أن الوضع تغير في السنوات الأخيرة وأصبح هناك موقف أكثر إيجابية إتخذته الشركات المنفتحة على التطور والتي تدرك أن التوصل إلى حل أمني فعال ينبغي أن يكون جزءاً من نهج شامل يؤدي إلى فعالية في تشغيل الأعمال. يمكن لحل أمني متكامل ومدمج تتفاعل فيه جميع الأجزاء المكونة تقديم أكثر بكثير من مجرد ردع أو كشف الزوار غير المرغوب بهم.

## Memco Supplies its Elite Elevator Safety Systems to New Delhi Airport

Elite elevator safety systems, from global elevator safety and communications specialist **Memco**, are to be installed in 74 elevators at Indira Gandhi International Airport's new Terminal 3 in New Delhi, India. The systems will be fitted to elevator doors supplied by **ThyssenKrupp Elevator**. Memco is represented in the Middle East by **TL Jones Asia Pacific**.

Memco's Elite safety system features two independent detection systems. The first is a light curtain of infra-red beams criss-crossing the elevator car's doors; the second is a 3D proximity detection system in the landing zone. Any person or large object breaking the light curtain or detected within the 3D zone triggers a system which automatically reopens the elevator doors.

The combined system consists of a transmitter detector (TX) and receiver detector (RX) mounted on the car doors. Each housed in a robust profile only 9.8mm wide, they automati-



cally sense door separation and adjust themselves for optimum performance. In many installations a separate controller is unnecessary and the detectors can be connected directly to the door controller or elevator operator.

The Elite features the latest software as standard, including power reduction and timeout features, and can be fitted to virtually any new or existing elevators. ■

## NVT UTP Hybrid Video™ Secures Athens Luxury Casino Complex

As part of its €110 million (\$145mn) reconstruction program, the Regency Casino Mont Parnes in Athens has extended its existing **Network Video Technologies Ltd (NVT) UTP Hybrid Video™** based CCTV surveillance network to cover new gaming and leisure areas, creating a system that now comprises more than 170 cameras.

*Piotr PJ Grzejszczyk*, Director of Surveillance at the Casino explains how the security specification process unfolded: "When it came to upgrading, we knew exactly what we wanted from our CCTV system at the newly redeveloped flagship site, and to help us secure the best technical partner, we were given comprehensive demonstrations by prospective suppliers. After these presentations it was clear that NVT's UTP Hybrid Video™ solution would not only provide us with surveillance image quality comparable to that achievable



with fiber, but allied to significant installation cost savings; with this conclusion we began a staged replacement of our existing coax-based CCTV transmission system."

During the specification process, video transmission via fiber and IP were rejected in favor of NVT UTP Hybrid Video™, due to the superior performance and comparative cost benefits when compared with that offered by the use of the NVT alternative. ■

## Synectics Integrates Sanyo HD Camera Range



**SANYO's** range of Full HD cameras can now be directly integrated into **Synectics'** award-winning SynergyPro™ security management platform, VMS (Virtual Matrix System), and MDRS H.264 enterprise class storage technology.

The easy inclusion of the range into Synectics-based CCTV networks means customers can take advantage of SANYO's latest Full HD camera technology, including 1080p High Definition imagery and 25 ips frame rate, alongside Synectics' enterprise class, fully flexible, and infinitely scalable video systems.

SANYO integration provides users with a compact camera design that includes up to 4 Megapixel image resolution and PoE (Power over Ethernet) capability - all controlled through Synergy's award-winning and intuitive SynergyPro™.

SANYO's range of ten Full HD cameras are collectively designed to provide a solution for virtually any project, with vandal resistant domes, PTZ cameras and a zoom camera included in the range, in addition to three fixed cameras with CS mounts to provide a wide lens choice.

Easy 'one-touch' set-up provides instant live images, available direct from the camera and via Synectics Primary Storage Node (PSN) Real Time Streaming Protocol (RTSP) distribution - alongside full camera control and Synectics Evidence Locker functionality. ■

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## Water Conservation Systems Make Eco-Friendly Bathrooms

**E**co-friendly bathrooms are equipped with water conservation products that help save considerable amounts of water. Available on the market today are special bathroom systems which can be of significant benefit to the environment whilst maintaining top standards of luxury and excellence in craftsmanship. The word eco-friendly is often associated with negative stereotyping of life without electricity or any home comfort, but with new innovations available today from leading bathroom fitting manufacturers, this is definitely not the case.

### Recycling grey water

Grey water is the used water from baths, showers, wash basins and sinks. Recycling grey water is an important part of going green in the bathroom. It can be re-used for flushing toilets or watering the garden.

In conventional treatment systems, used water undergoes chemical treatments to become sterilized - a procedure that is very harmful to the environment in view of the harsh and damaging chemicals used in the sterilization process. Contemporary eco-friendly bathrooms however do not use harmful chemicals. The waste water from baths, showers and basins undergoes a four-stage cleaning process using UV light instead of chemicals to kill germs and bacteria.

Recycling grey water can cut water consumption in half and fresh water is conserved. Fitting a system to a bathroom that enables grey water to be recycled can save up to 50,000 liters of fresh water per day.

### Bathroom fittings

The average shower uses 18 liters of water every five minutes. Innovations such as shower heads which expel water mixed with air, for instance, can save up to two thirds of the water consumption.

Water conservation products have also begun to focus on saving electricity to lower costs. Automatic thermostat controls and timers on geysers are used to ensure that water is heated to a constant temperature and that, while residents are out during the day, the geyser isn't running. Most geysers are heated to about 60 degrees Celsius. This is hotter than is necessary, and energy consumption can be nearly halved by turning geysers down to 38 degrees. This has little to no effect on the shower as the water is still perfectly warm and the pressure is not affected. A cooler hot water temperature also greatly reduces the risk of scalding.



The use of water conservation products is not confined to home applications. Hotels and offices are also benefiting from eco-friendly bathrooms, as is the environment. Devices such as automatic taps, which are fitted with sensors that read the proximity of a person to the fitting, only turn on when someone is close to the tap. Not only is this more hygienic in a public bathroom because it is not necessary to touch taps, but it also means that taps are never left open and minimal water is used.

### The conscious resident

Whether using an eco-friendly bathroom system or not, every person can help conserve water and protect the environment.

Everyone should try to use water sparingly in their bathroom. Some good tips include things like not running the tap while brushing your teeth. A dripping tap leaking ten drops per minute will leak 170 liters in a month so leaky taps should always be fixed as soon as possible. Taking a shower instead of a bath saves an incredible amount of water; a quick shower uses 50 liters of water while a bath uses 150. A water-saving shower head can be fitted to prevent heavy water flow and save a lot of water per household.

Installing an economy flush on a toilet is also a good idea as it allows the toilet user to select a light or heavy flush, instead of always flushing a large amount of water each time it is used. The cistern of the toilet should be checked regularly because leaking seals can also waste massive amounts of water.

Water resources are wasted at an alarming rate worldwide. It is vital to ensure that the environment and especially water resources are protected. The promotion of water-wise behavior within the home and work environments is one of the best measures towards slowing the worsening problem of water shortage and pollution. Eco-friendly bathrooms and water conservation products are a significant means to saving valuable fresh water. ■

Source: Greenprofs, [www.greenprofs.com](http://www.greenprofs.com)

الحمامات الصديقة للبيئة مجهزة بمنتجات تساعد على المحافظة على كميات كبيرة من المياه. تتوفر في السوق اليوم أنظمة خاصة للحمامات ذات فوائد كبيرة من حيث الحفاظ على البيئة والموارد الطبيعية وهي تقدم في نفس الوقت أعلى معايير الرفاهية والتميز من حيث المظهر الجميل وتأمين الراحة للمستخدمين. غالباً ما ترتبط عبارة "صديقة للبيئة" بنظرة نمطية سلبية لحياة دون كهرباء أو راحة في المنزل، لكن مع الابتكارات الجديدة التي تقدمها اليوم الشركات المصنعة لمعدات الحمامات واللوازم الصحية لم يعد هذا الاعتقاد صحيحاً على الإطلاق.

## KLUDI RAK's Water-Saving System to Complement Abu Dhabi's Water Conservation Drive

**KLUDI RAK**, a leading manufacturer of world-class bathroom fittings and a joint venture between **RAK Ceramics** and high-profile German manufacturer **KLUDI**, has recently developed a new water-saving system that enables customers to save up to 50 percent on water consumption.

The introduction of the water-efficient aerators in the UAE coincides with the launch of major water-conservation efforts in the country, particularly the 'Watersavers' campaign spearheaded by the Environment Agency - Abu Dhabi (EAD) which will see every tap in Abu Dhabi fitted with water-saving devices within three years.

A key component of KLUDI RAK's water-saving system is the Pressure Compensating Aerator, which ensures constant flow of water even in cases when water pressure is increased or fluctuates. KLUDI RAK has also developed a new Flow Regulator, which maintains a defined flow rate regardless of pressure variation of the supply line.



Compared with conventional aerators, KLUDI RAK's aerators also deliver several other advantages, including superior lime protection, damage-proof design, extended lifespan, perfect stream quality even under difficult water pressure conditions, and integrated anti-clogging dome screen that filters sediments and particles. Dr. Khater Massaad, CEO RAK Ceramics said, "It is KLUDI RAK's lifetime commitment to develop, design and manufacture environmentally friendly products that combine technical perfection and high functionality. KLUDI RAK aerators have been meticulously developed to deliver superior performance in all key categories." ■

## Villeroy & Boch New Impetus for Loop & Friends

Good design has many friends – this is the motto **Villeroy & Boch** has used for its Loop & Friends washbasin line since its launch seven years ago to complement it with ever new members and thus turn it into its most successful line of washbasins. For spring 2010, this strategy was pursued further with new shades and a new method of mounting: With the trendy new colors of Espresso and Cassis, any washbasin area can now be beautifully accented with Loop. In the future, the round surface-mounted washbasins can also be mounted semi-recessed.

With its clean design, a huge selection of geometric shapes and a great variety of mounting alternatives and sizes, Loop & Friends offers versatile combinations and the best in flexibility for personally designed bathrooms. After the vessel washbasins got a facelift last year with a modern, delicate design, Villeroy & Boch now presents the round vessel basin as a semi-recessed mount. This innovative manner of installation, in which the basin is partially lowered into the vanity unit perfectly fuses functionality with a modern look: Because only part of the washbasin is visible, it appears especially flat and filigree, though still offering the full basin depth.

To create suitable vanity units six models in the Shape collection have been modified and adapted to meet the demands of semi-recessed washbasins. The vanity units



come in the sizes 75, 135 and 165 cm and in a variety of versions with two and four sliders. The 165 cm sized furniture can also be used to create attractive double solutions. A selection can be made between either a white gloss-lacquer or an anthracite gloss-lacquer front, as well as between the melamine colors Macassar, Merano, Arabesque and Crème. The washbasins are delivered with a stencil template that thus allows them to be mounted into marble or melamine countertops in the same way as conventionally installed washbasins. ■

## Dornbracht Expands the Lulu Series



Since it was introduced to the market in 2005, the Lulu fittings series from **Dornbracht** has thrilled many with its smooth surfaces which transform Lulu into an object of elegance in the bathroom. Lulu is simultaneously linear and soft, slender and alert, which continues to be evident in the new series expansions.

The new Lulu three-hole basin mixer with a single rosette reflects the compact design combining different basic geometric shapes such as cubes

and cylinders. Also new: the Lulu wall-mounted four-hole bath mixer with a single rosette.

For a very special showering experience, Dornbracht is premiering a square rain sprinkler variation specially designed for the Lulu series with rounded corners that underscore the character of Lulu.

"The world of Lulu is a play on French cultural life: on love, passion, fashion, photography, colours, music, sensuality," explains managing director *Andreas Dornbracht*. "The decision to use the name Lulu is a homage to Loulou de la Falaise - formerly a muse to the French fashion designer Yves Saint Laurent who unfortunately passed away in 2008."

Lulu will continue to be offered as single-lever taps for basins, walls, bathtubs, showers and bidets and will be available in chrome and platinum finishes. In addition, corresponding accessories will also be offered for the fittings series. ■

## Yurtbay Seramik Chooses New Complete Line from Ancora

**Yurtbay Seramik** has demonstrated its confidence in Ancora Group's many years of experience in the design and construction of plant and machinery for end-of-line processing by choosing the Sassuolo-based group's products for end-of-line treatment of polished porcelain tile.

One of the largest ceramic manufacturers in Turkey with an annual production capacity of almost 20,000,000 m<sup>2</sup>, Yurtbay has purchased a new complete high-productivity polishing and squaring line which will begin operation during the summer.

The new plant, consisting of an 8-head roughing machine, a 40 oscillating head polishing machine and a squaring machine for sizes from 300x300 mm through to 600x1200 mm, was fully designed and built in Italy at Ancora's facility in Sassuolo.

"This new order not only confirms Ancora Group's leadership role in



designing and building plant and machinery for end-of-line processing but also sends out a positive message about the sector's eagerly-awaited economic recovery and in particular about our presence in the Turkish market," commented the Group's Managing Director *Fabio Corradini*.

Ancora Group is a well-established industrial group based in Sassuolo which specializes in the design and construction of plant and machinery for end-of-line processing of ceramic products. ■

## Fincibec Specializes in Ceramic Digital Decoration



With the installation of the sixth and seventh digital decoration lines in its factories, the **Fincibec Group** ranks now at the top among the ceramic companies equipped with these latest generation industrial plants. The productive capacity of the Group, as far as digital technology is concerned, now exceeds 4,000,000 m<sup>2</sup>/year.

Fincibec has been among the first companies in this sector to invest in the study of digital decoration without contact, with the aim of enriching - through this process - the production of industrial ceramic and of freeing it from restraints and artificiality of repetitive traditional decoration technologies.

The new "Digital Jet System" is the result of a long and complex research that has involved the application as well as a deep study of coloring oxides. Nanopigments were thus realized, able to develop and integrate in the product at the extremely high sintering temperatures.

The result is an outstandingly high aesthetic quality, thanks to the transfer of high resolution images, together with the superb performance of the latest generation technical ceramic.

The dramatic reduction in processing scraps and wastes enabled by the system and the better rationalization in the use of energy and raw materials are perfectly consistent with the "Ecology care" project, the industrial policy system pursued by Fincibec to safeguard the environment. ■

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# Waterproofing The Key to Design of Sprayed Concrete Lining of Tunnels

A Stirling Lloyd Article

**T**he global tunneling industry has many challenges, both technically and financially, with the latter likely to be a significant feature over the next few years. Whilst many industries have adopted standard practices in order to overcome specific technical challenges, from which standard outcomes are anticipated, in tunneling every project is unique so standardized practice is not easy. This requires original thinking and being open to adopting new techniques and technologies as they emerge. Sprayed waterproofing is a hot industry topic and a paper recently presented at the North American Tunneling conference not only discussed this methodology for achieving a dry tunnel but also how it can reduce build costs and construction time.

Despite there being relatively few "universal truths" throughout the tunneling industry, there is one opinion that appears to be shared by most in the sector: "all tunnels leak".

"Coming from the angle of a specialist waterproofing manufacturer with 25 years of experience in waterproofing all types of civil engineering structure throughout the world, the concept that leaking tunnels are acceptable seems quite odd," comments Stirling Lloyd's Development Director, Mike Harper. "However, Tunnel Engineers across the world relate to their experience of what they have known up to now; that is, to a greater or lesser extent, tunnels let water, regardless of what you do. Tunnel Engineers are therefore having to compromise on what they feel is an acceptable level of leakage rather than creating a dry tunnel. Over the last eight years we have been asking ourselves whether it is possible to achieve a watertight tunnel and have developed a method for achieving this," he added. In other industries accepting something that is nearly watertight is just



not acceptable. For example, in the aviation industry having an aircraft that allowed water to penetrate the outer shell would not be tolerated, neither would a submarine which had a few leaks, damp patches or running water. In an environment such as tunneling, where water penetrating into the structure can cause many problems it is not acceptable for tunnels to let in water. If an aircraft or a submarine can be made watertight so can a tunnel. Whilst it is true that the tunnel environment presents different challenges for waterproofing than some other engineering environments, such as bridge decks or chemical tank linings, if the requirements are clearly understood, effective waterproofing can be achieved. Waterproofing is an exact science; a structure is either waterproof or it is not. This is a case of black and white; grey is leaking. The risks presented by water ingress include short term maintenance issues which, in the long term, can degrade the fabric of the tunnel itself, shortening the overall life of the asset. Poorly waterproofed tunnels have serious economic and environmental impacts which is why addressing this issue is so fundamental.

## 1 - WATERPROOFING THAT WORKS

The decision on how to waterproof a structure is much more important than the lowest initial cost per square meter of material. It is how the wa-

terproofing will perform over the 120 year design life of the tunnel, and what the risks, costs and environmental considerations associated with failure of the waterproofing are.

There are some well established criteria for successful waterproofing systems to meet to effectively waterproof a concrete structure, which have been implemented in the external lining of tunnels, such as cut and cover and immersed tube tunnels, for the last twenty years. These five key requirements can and should also be applied to the internal lining of a tunnel of SCL / SEM / NATM design to create a dry tunnel.

### Crack Bridging Capability

This is fundamental to a successful long term waterproofing membrane when the membrane is intimately and continuously bonded to the concrete substrate. Cracks in new concrete are inevitable at some level, whether from shrinkage during curing or from ground movements. A sprayed membrane needs to be able to bridge cracks that open up or the waterproofing will also crack with the concrete and leaks will appear. Consequently the product must not only be flexible but also have a very high tensile strength.

### Seamless

Where sheet systems are concerned the problems of leaking tunnels emanate not from the middle of pre-



formed sheets but from the seams where the sheets have been welded together on site. The more the seams that are present the more likely leaks are. Complex geometry provides the opportunity for even more seams, which gives the potential for more leaks. Minimizing, or preferably eliminating, seams is therefore the goal. Where sprayed membranes are concerned seams can still be an issue; the chemistry of the system should be such that a completely seam free installation is achieved. Although much has been done to minimize the impact of seams, including double seaming, trying to test seams and installing grout pipes to try and stop leaks through seams, these fail to address the root cause, which is of course the presence of vulnerable seams in the first place.

#### Suitability

There are many types of waterproofing membranes in the world, made from a wide variety of base chemistry; some well known systems such as polyurethane, epoxy and methyl methacrylate (MMA), and less well known, such as polyureas, rubber emulsions, polysulphides and polymer modified cements. All have various characteristics which are better suited to some applications rather than others. The confined space environment of a tunnel and the high cost in terms of time of tunnel construction present some challenging requirements for a successful tunnel waterproofing membrane. In addition to it being watertight the system must have low toxicity and a low explosion risk. The membrane must also be tolerant to moisture, as there is a negative water pressure environment and some ingress prior to application of the waterproofing is inevitable. The membrane should also cure quickly to ensure there is no costly, unproductive time during the construction process. These requirements have necessitated a specific chemistry design for the product to deal with this particularly challenging environment.

#### Control

As with any trade, control of the activity is key. Although some perceive that forming a membrane in situ is more difficult than forming it in a factory, the material only becomes a waterproof membrane once it is in-

stalled and therefore controlling the installation of sheet systems can often be more difficult than a sprayed system. Application of sprayed membrane should be accurate; wet film thickness tests throughout the application will ensure that the membrane is being applied to the correct thickness. The material should be installed by a spray operative as robots will not be able to see if a section has been missed. A system which is applied in two thinner coats is more effective than a single coat membrane; not only is thickness more controllable but the second coat will rectify any potential small defects in the first coat, thus reducing the possibility of any problems. The material should also be simple to use; to avoid on-site variance the product should be pre-batched and pumped together in fixed ratios. All of this needs to be covered by an onsite Quality Assurance regime and comprehensive training should be given to operatives.

#### Proof

A membrane must be 100% effective, whether sheet or sprayed, in order to be watertight and being able to prove this is of the utmost importance. Where the ground has been dewatered the effectiveness of the membrane may not be evident until the groundwater table is re-established. Therefore using a quantitative, reliable test method to ensure that the membrane will not leak is essential and should always be undertaken. For sheet membranes this cannot be done; in the factory it may be possible to test for defects in the preformed sheet itself but they cannot be re-tested for the effects of site damage during installation or by following trades once in situ. Also not all seam types can be adequately checked on site, therefore potential for leaks go undetected.

For some sprayed membranes testing is very simple. Spark testing is a non-destructive test method which has been used to great effect in other industries. It tests every inch of the membrane and finds any defects, even one the size of a pin hole in 100,000 sq m of applied waterproofing, ensuring that the waterproofing membrane is completely continuous. If any defects are identified these can be rectified prior to the application of the final lining, before it becomes

expensive and near impossible to fix. This is the only method of ensuring that the waterproofing integrity has been achieved.

## 2 - A DRY TUNNEL IS POSSIBLE

A dry tunnel can be achieved through using products which are controllable, suitable, seamless and can be reliably tested. Other areas of the tunnel industry, such as cut and cover and immersed tube tunnels, as well as other sectors of the construction industry, have used this 'best practice' methodology for many years throughout the world and it has been proven to work.

For contractors / tunnel builders there is also the benefit of reducing uncertainty. The time, expense and disruption from "chasing leaks" around a tunnel which should be dry, requiring expensive repair should no longer be a concern when the waterproofing can be done correctly first time.

Consequently, there is now no reason for clients to accept a leaking tunnel; poor quality environments for tunnel users, long term running costs issues, such as pumping and disposal of water, and early degradation by the action of water ingress and its associated damage should be a thing of the past.

## 3 - DESIGN OPPORTUNITIES

At present the tunnel industry around the world is looking at the issue of effective waterproofing very carefully, not only because of increasing requirements for water tightness, but also because of a realization that a fully bonded sprayed waterproofing in tunnels of an SCL / SEM / NATM design offers some poignant design opportunities. This has much greater implications for tunneling projects, in terms of reducing cost and time.

#### Sheet Systems

In traditional SCL tunnel construction, regardless of how much sprayed concrete is applied as the primary lining, from a structural perspective, this concrete is ignored. The full structural load is supported by the final or secondary lining. The traditional build would therefore be sprayed concrete onto the excavated surface, followed by installation of a sheet membrane. The sheet membrane is



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## Arab Construction World (ACW)

August 2010 / Vol. XXVIII Issue 08

Serving the Building, Construction Machinery,  
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The new Genie GTH™.4018 SR telehandler has a maximum height of 17.54 m, a maximum lift capacity of 4000 kg and can lift up to 500 kg at a maximum forward reach of 15.53 m. With an excellent lifting capacity and horizontal reach, it is ideal for many applications and can lift substantial loads such as steel, masonry, and bricks around the worksite.



tacked to various points and is not fully bonded to the primary concrete. The choice for final lining construction is then limited by the nature of the waterproofing membrane as it is exceptionally difficult to get sprayed concrete to bond to a sheet membrane system, because the membrane does not have a continuous bond to the primary lining. Thus the sprayed concrete tends to re-bond off the membrane surface. This effect can be reduced by the use of lattice girders and reinforcing steel mesh to help support the sprayed concrete during application. However, this tends to reduce the quality of the final lining as achieving adequate compaction of sprayed concrete through a network of steel reinforcement is difficult, resulting in voids and failure to passivate the steel against corrosion from ground water when it is not adequately encapsulated. The construction method currently favored for final linings tends to be traditionally reinforced cast in situ concrete. This is much slower than spraying concrete and therefore potentially much more expensive. In long tunnels of consistent cross-section

tion casting the use of shutters can be cost-effective. However, in complex geometry situations, such as metro stations, where interconnecting tunnels and passages have widely varying cross-sections, shuttering becomes increasingly complex and expensive. At the same time, waterproofing requirements are usually most onerous in these areas, where both LUL and Crossrail are currently asking for completely dry tunnels in their specifications.

### Sprayed Systems

The great design benefit of a spray applied waterproofing membrane is that the final lining can be installed using permanent sprayed concrete instead of cast in-situ. With fiber reinforcement, traditional lattice girders and re-bar no longer required, increasing build speed and reducing cost.

Colin Eddie from Morgan Sindall Underground Professional Services takes the view that "depending on the design of the tunnel, cost savings of up to 50% are achievable with a sprayed solution, when considering the waterproofing and final lining taken together".

Reduced cost, faster build speed and higher quality waterproofing performance are a powerful argument in favor of sprayed waterproofing membranes for tunneling. However, the most significant advance that a fully bonded sprayed membrane enables is use of the "composite effect" between the primary and secondary sprayed concrete layers.

### The Composite Effect

Construction which includes sprayed waterproofing, the primary and secondary concrete layers are both fully and intimately bonded to the membrane. Consequently, unlike when using sheet systems, both the concrete layers are acting together and therefore the primary and secondary linings contribute to the load bearing capability of the tunnel.

Research carried out by Morgan Sindall, both in their Underground Professional Services division at

Rugby and supported by further work at Warwick University to test this theory have shown that two concentric rings of sprayed concrete, bonded together by Stirling Lloyd's Integritank HF tunnel waterproofing membrane, behave in the same way as a monolithic ring of the same dimensions.

Whilst earlier work has suggested that a mechanical key between the concentric rings is required by way of an uneven interface, the Warwick university work actually shows that this is not the case, and even with a smooth interface the full effect is achieved.

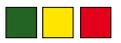
This is where the major benefit for future tunnel design lies and one which will have a profound effect on the industry. If part of the primary lining can be considered to contribute in structural calculations then the ultimate application could mean that tunnels can be built with a lower overall lining thickness. This means reduced excavation, reduced volume of concrete required and a reduction in the associated transport and installation costs. There is also a significant environmental benefit in reduced waste and reduced carbon generation, in addition to the commercial benefits of building lower cost tunnels in a shorter time-frame.

So the move to sprayed waterproofing that is occurring around the world in tunnelling has far wider implications than 'only' achieving the previously seemingly impossible dream of dry tunnels. It also produces significant environmental and commercial benefits. Better performance, greater longevity, reduced environmental impact and lower cost; in a world reeling under financial constraints this could not have come at a better time. ■

### About Stirling Lloyd

Stirling Lloyd specializes in the development, manufacture and application of high-performance waterproofing and structural protection membranes and systems. From road and rail to bridge decks and tunnels, to commercial building developments, to car parks, traffic and pedestrian safety, Stirling Lloyd protects some of the world's most important structures.

تواجه صناعة حفر الأنفاق حول العالم العديد من التحديات من الناحيتين التقنية والمالية ومن المرجح أن تشكل هذه الأخيرة مسألة كبيرة على مدى السنوات القليلة المقبلة. في حين اعتمدت العديد من الصناعات ممارسات موحدة من أجل التغلب على تحديات تقنية محددة والتي يتوقع أن تعطي نتائج معيارية، كل مشروع يجري في صناعة حفر الأنفاق هو فريد من نوعه وليس من السهل اعتماد ممارسة موحدة في هذا المجال. يتطلب الأمر هنا تفكيراً خاصاً وانفتاحاً على تبني تقنيات وتكنولوجيات جديدة عند ظهورها. تشكل اليوم مواد منع التسرب التي ترش على الأسطح موضوعاً ساخناً على مستوى الصناعات، هذا وقام بحث جديد تم تقديمه مؤخراً في مؤتمر شمال أميركا لحفر الأنفاق بمناقشة هذه المنهجية التي تسمح بتحقيق جفاف تام في الأنفاق بتكلفة أقل ومدة أقصر. تناقش هذه المقالة من شركة - ستيرلنغ لويد - تصميم البطانة المانعة للتسرب التي ترش على الجدران الخرسانية للأنفاق.



## CEMTEC A-II PU

### to Span the Years

CMCI is a leading manufacturer and supplier of quality construction chemicals in the Middle East. The company manufactures a full range of concrete chemicals to serve the growing market in the construction industry.

The Gulf climate conditions and the effects of aggressive atmospheric chemicals and salts make surfaces vulnerable to decoration. Selecting the right product is about more than achieving durability. CEMTEC A-II PU is a high quality, flexible and cost effective solution to span the years.

From foundations, basements to parking decks, roofs decks and more, CMCI has the technical expertise to make the most of structures.

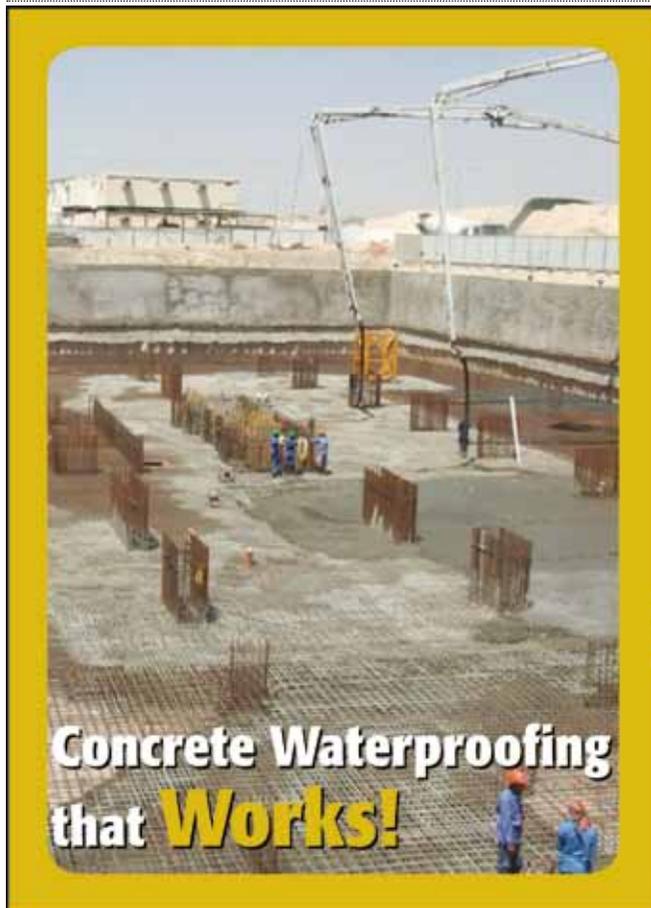
Cemtec A-II PU's design formulation allows the coating system to virtually adhere to any common construction substrates and form a tough but flexible waterproofing coating system with retention of properties from - 59 deg. C to + 80 deg. C.

Thanks to advanced technology, Cemtec A-II PU is designed to cure faster by chemical reaction and doesn't depend on moisture to cure. The technology also allows to buildup thickness easily, as it is available in two grades: Type I - a non-sag grade for vertical surfaces and Type II a self leveling grade for horizontal surface. Apart from this, Cemtec All PU comes in multiple colors (Black, Grey, White and Brick Red).



The area of application includes practically all substrates which demand a foolproof system, such as foundations, swimming pools, parking decks, roof decks, basements, in between concrete slabs, potable water reservoirs, structures that are to be backfilled.

Listed below are some advantages of Cemtec A-II PU waterproofing system: Easy to apply - spray methods, brush, roller, squeegee or trowel; Excellent adhesion with elastomeric properties; High peel strength; Suitable for any substrate - concrete, brick, wood, metal, etc.; Fast curing help in cutting downtime; VOC is Nil and non toxic when cured. ■



### Experts in Crystalline Concrete Waterproofing & Repair

Stop using unreliable membranes to waterproof your concrete. Since 1973 Kryton has helped architects, engineers and builders create dry, waterproof concrete using Krystol Technology.

Our waterproofing admixture, KIM®, is faster, more reliable and costs 25% less than using traditional waterproofing systems. KIM® is backed by the industry's longest warranty.

For more information on the longest standing crystalline waterproofing admixture jobs in the world, visit us online at [www.kryton.com](http://www.kryton.com) or call us at +1 604 324 8280.

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At the Lab. In the Field.  
By Your Side.

## Wide Variety of Waterproofing Products from Falcon Chemicals



**Falcon Chemicals LLC** is the leading manufacturer of a wide variety of waterproofing products based in Jebel Ali industrial area Dubai. Falcon chemicals is an ISO 9001 and ISO 14001 certified company with more than 30 years of experience. Falcon Chemicals uses latest available technology to manufacture products meeting the international standards and specifications.

Falcon Chemicals offers eco-friendly waterproofing products which have been successfully performing under the harsh Middle East climatic conditions. The waterproofing range consists of: Bitumen base liquid membrane; Acrylic waterproofer; Cementitious slurries; and Polyurethane liquid membrane.

A wide range of products are available in liquid form for different areas of the building e.g. Substructure, Kitchen, toilets and balconies and roof waterproofing. The company also manufactures cement based slurries for waterproofing of water retaining structures such as water tanks and swimming pools where the hydrostatic pressure is very high.

The two component slurry is non toxic and recommended for use inside the potable water tanks also.

The acrylic and PU products are recommended for exposed areas where aesthetic appearance is the prime requirement.

Falcon waterproofing products have been used on many prestigious projects all over the Gulf and many other countries under variable climatic conditions. Besides the Gulf countries, these products are regularly exported to Afghanistan, Angola, Australia, Equitorial Guinea, Eritrea, Ethiopia, India, Iraq, Kenya, Lebanon, Madagascar, Mozambique, New Zealand, Pakistan, Somalia, Sri Lanka, Sudan, Syria, Tanzania, Uganda, Yemen and Zambia.

Falcon waterproofing products have been approved and accepted by many internationally renowned consultants. A team of qualified and experienced personals is always available to help contractors, consultants and applicators in selection and application of the product.

All of the above referred-to products are environmentally friendly, economical and easy to apply. Technical date on individual product and supporting documents are available on request from the sales and marketing department. ■

## Malaysian Waterproofing Expert Greenseal Speaks about the Industry Today



The early design of waterproofing was detected as early as 1823 and at that time it was merely for the textile industry. Since then, many changes have been seen in the industry and it is now focusing more on the prevention of leakages on civil engineering structures.

Waterproofing products developed during this period of time include flexible cementitious, Bituminous PU Modified Coating, Torch On Membrane, Acrylic Coating and many more. The major breakthrough in the industry is indeed, the creation of crystallization products in the late 1970s. Till now, only a handful companies do have access to the technology.

The basic of crystallization waterproofing is very simple: the creation of waterproof crystal in the pores and capillary of concrete, thus blocking the passage of water permanently. Crystallization waterproofing is a continuous process as long as the crystallization chemicals and water present inside the concrete. Today, this technology has helped many engineers in preventing and solving the leakage related problems in critical areas such as basements (with serious water seeping problem), swimming pools and water retaining structures such as reservoirs.

The crisis of global warming has eventually created a demand of 'Green' products and this has resulted in the creation of new technology in the waterproofing in tandem with that trend. The heat reflective coating with waterproofing properties is the most outstanding of such. This kind of waterproofing coating plays a multiple role such as heat reflective, anti fungus, sound deterring and minor crack sealant. Such waterproofing with low Volatile Organic Compounds and its non-toxic properties reduce the effluent of environmental damaging chemical into our fragile water system. Other new waterproofing products in the market are those related to the 'Green Roofing'.

**Greenseal Products** develops, manufactures and markets a comprehensive range of waterproofing products and treatments in Kuala Lumpur, Malaysia. With over two decades of experience in the market. ■



## The ICOPAL Group Offers Roofing and Waterproofing Membranes



The **ICOPAL Group** is the world's leading producer of roofing and waterproofing membranes. The ICOPAL product portfolio also includes other construction materials for the protection of buildings and other structures.

ICOPAL's main product groups are: Bitumen roofing and waterproofing membranes; PVC & TPO roofing and waterproofing membranes; Bitumen civil engineering membranes; Bitumen roofing shingles; Liquid products; Scaffold sheeting; Gutters; Plastic roofs (Fastlock); Skylights and fire ventilation; Sound deadening materials for walls and floors; and Radon and gas membranes.

The ICOPAL Group has a turnover of about EUR 1 billion (\$1.32bn) and employs some 4,000 people. ICOPAL, which is headquartered in Denmark, operates globally and has 32 manufacturing sites and 84 offices throughout Europe, North America, Asia and North Africa.

SIPLAST is the brand name for the French and American subsidiaries of the ICOPAL Group. Enjoying a worldwide recognition, SIPLAST is the inventor and Number 1 SBS bitumen modified waterproofing manufacturer, with over 50 years of innovation and expertise.

SIPLAST is providing high quality, fit for purpose and cost effective solutions for roofing, waterproofing, tanking and Civil Engineering, to meet high demands and customer satisfaction.

SIPLAST has proven records and many references in the MENA region with high class range of products such as:

- ADEPRIMAIRE, FONDACOAT for building protection.
- PARADIENE, PARAFOR SOLO, PARADIAL S, PREFLEX / GRAVIFLEX, MONARPLAN for roofing.
- TERANAP TP for tanking.

In the recent years SIPLAST has been very active in the field of 'green products' offering innovative solutions for the building industry such as: Photovoltaic flat roofs with ICOSUN concept; De-contaminating membranes with Eco-Activ® products; and Reflective membranes meeting high reflectance and emittance requirements. SIPLAST systems qualify to LEED certifications and many other International standards. ■

## Protection of Exposed Decks with Flowcrete Polyurethane Systems



Rainwater seeping through the unprotected floor surface of a multi-storey car park onto the level below leads to costly, time-consuming repairs and causes disruption to operations. For car-parks with exposed decks, heavy rainfall, UV exposure and high humidity work in combination with airborne water, salts and vehicle-related chemicals to cause long-term damage to the fabric of the structure. The early onset of corrosion, cracking of the host concrete and potential structural failure are all possible outcomes. According to *Andrew Gwyther*, Managing Director for **Flowcrete Middle East**, finishes such as concrete, asphalt and even epoxies are not sufficiently robust, even over relatively short periods. "They are prone to cracking, abrasion, damage from chemicals and exposure to the elements, problems that are then exacerbated by the inherent movement of car-park structures." Deck coatings must therefore be waterproof, elastomeric with the ability to bridge dynamic cracks and chemical resistant.

A number of major projects have been carried out in the Middle East using a high performance polyurethane deck coating system known as Deckshield. At Jumeirah Lakes Towers, the podium car parks of 78 towers were installed with the system and at Dubai Marina Mall, a total of 12,000 square meters was installed at the circular multi-storey car park, including the top level where the special exposed deck formulation provides additional protection.

Deckshield has also been used extensively at Dubai Airport, where 110,000 square meters was installed on all five levels of the multi-storey car park, including the exposed top deck. A further 260,000 square meters was installed in other high traffic areas including service roadways, baggage handling areas and in all plant rooms.

One of the only systems of its kind to be certified to ASTM C957, Deckshield is also being installed at the Heliopolis Intercontinental Hotel, Cairo and at Abdali Boulevard in downtown Amman, Jordan. ■

## SealBoss Heads Concrete Repair Industry



US based manufacturer and distributor, **SealBoss Corp.**, will be celebrating 23 years of service in the concrete repair industry in 2011. While the product line continues to grow and improve, the service and commitment to successful waterproofing projects remains unchanged. SealBoss Corp. offers complete system solutions for polyurethane, epoxy, and polyurea applications.

These systems are available in bulk packaging for large industrial and commercial projects as well as cartridge and DIY kits for smaller applications and residential uses. These DIY kits are available along with the popular Polyurea kit for spall and joint repairs. Large or small, wet or dry, it is best to consult the Bosses of Sealing, SealBoss.

The latest addition to the SealBoss product line is the P2002-2C dual component, epoxy and polyurethane, drill-operated high pressure pump. This new design offers all injection contractors both the price and handling conveniences of smaller pumps and the durability and pressures of larger units. With an economical price point, the P2002-2C is a great alternative to the more expensive dual component pumps on the market. The P2002-2C is available in 110V or 220V and can easily be changed between a 1:1 and 2:1 ratio. ■

## SODAMCO Waterproofing Solutions Keep Structures Dry

Leaking roofs, busted water tanks and cement pipes, wet walls and facades are no longer a problem. **SODAMCO** provides a full range of solutions and applications capable of remedying to all kinds of leakage issues.

The SODAMCO waterproofing range includes a wide variety of products that meets all requirements and needs; from bituminous roll membranes to liquid polyurethane and bituminous membranes, fast setting cementitious mortars, surface water repellents, geotextiles, waterstops, joint sealants, not to forget the hydrophobic and waterproofing admixtures for concrete and mortars that are part of our specialties.

With a solid presence in Lebanon, Syria, Jordan, Qatar, UAE, Kuwait and Saudi Arabia, SODAMCO is a leader in waterproofing solutions.



**SODAMCO**  
CONSTRUCTION CHEMICALS EXPERTS

SODAMCO product lines are developed and manufactured through extensive research and firm quality control procedures to the highest International Standards.

In 2009, Saint-Gobain Weber, part of Saint-Gobain group and worldwide leader in Industrial Mortars, finalized a joint-venture agreement with SODAMCO.

Striving continuously to serve its customers in the best ways, the company will always provide them with the right solutions in waterproofing techniques. ■

## Glass Wool Offers the ISOGUM Waterproofing Bitumen Membrane



**Glass Wool Co.** of Iran is the first and the biggest manufacturer of various kinds of thermal and sound insulation products made of glass wool (ISORAN), and waterproofing bitumen membrane (ISOGUM) in Iran.

The 2-5.5 mm thick ISOGUM waterproofing bitumen membranes consist of single or dual carrier(s), and are impregnated with appropriate polymer modified bitumen. According to the applications these carriers vary from 60 to 120 gr/m<sup>2</sup> industrial tissue and thermo bonded or non woven polyester. App or SBS together with other components are used for modifying bitumen in order to have proper physical and chemical properties which result to high quality products.

To decrease the destructive effects of UV-ray of sunlight and physical damages to the installed products also for easy unrolling, they are covered with slate flakes, sand, talc powder or faced with Aluminum Foil.

High tensile strength, thermal stability and excellent cold flexibility of the water proofing membrane "ISOGUM" make it suitable for many applications such as building, tunnels, pools, bridges, and sanitary services. Coating pipe lines with ISOGUM protects them against rust and chemical corrosion as well. ■



## Canadian Construction Companies Remain Cautious about Surety Market

**W**hile many construction companies are currently performing well, there are concerns Canada's economic recovery hasn't yet established deep roots, reports Dan O'Reilly in the *Journal of Commerce*, Western Canada's Construction Newspaper. That could mean a more restrictive surety bond market in the near future, warned representatives of the insurance, brokerage and legal professions.

"Our industry suffers from the flash-to-bang syndrome, not unlike lightning and thunder," said Surety Association of Canada president Steven Ness. He was drawing a parallel with the length of time it takes before the impact of changing economic times is felt by his industry.

Many construction projects now well underway or reaching a conclusion were planned, designed and financed well before the worldwide financial crisis started, he explained.

Now, the construction landscape seems to be changing with too many contractors chasing too little work. The situation may become more acute if a private sector-driven rebound doesn't take hold by the time the federal infrastructure stimulus program finishes in March 2011, said Ness.

"We're starting to see a number of contractor defaults on contractual obligations out West," he said, adding that the problem is always serious when there's a claim.

Other tell-tale signs of slowing construction activity include a rise in claims and disputes during the past 12 months, longer bid lists, declining profit margins and deteriorating earnings, said Mike George, co-CEO of Trisura Guarantee Insurance Company.

"Some contractors in 2009 also lost money," he said. Increasingly a number of private-sector owners, who might not have purchased bonds in the past, are doing so now to ensure their buildings are completed and labor and material suppliers are paid, he added.

It isn't an entirely dire situation as provinces and municipalities must continue spending to rectify their infrastructure deficits. For example, there is speculation the Ontario government will announce a multi-billion dollar 10-year infrastructure plan in its next budget, George noted.

Like the Surety Association's Ness, however, George is worried there could be a long lag period from the time the infrastructure stimulus ends and private sector construction and development kicks into high gear.



"I think things could be tough out there a year or 18 months from now. There will be a lot of contractors chasing less work in a very crowded marketplace and they will have difficulty securing profitable work," he said.

The chairman of the Toronto Construction Association believes the surety bond industry will exercise greater caution and prudence in the current economic climate, especially on more complicated projects such as joint ventures.

"In a joint venture you have a 50/50 partnership. But a bonding company might argue each contractor is exposed to risk on the entire project," said Glenn Ackerley, partner with WeirFoulds LLP.

If the economy stays flat or becomes worse there will be a lot of pressures in other areas as well, said Duncan Glaholt, a principal with Glaholt LLP, a firm that specializes in construction and dispute resolution. Contractors who rely on banks for financing can expect greater scrutiny and limited access to bonds. This will be especially true for firms that pursue entirely different work for reasons such as more opportunity or lack of work in their own specialized fields.

"A home contractor who suddenly wants to build a school or a sewage plant will send off warning lights," he said.

"Sureties will also be very cautious about contractors, who try to buy work with low bids."

Another possible development by underwriters is a more detailed contract analysis including issues such as sudden or unexpected rise in material prices.

As a hypothetical example, Glaholt cited a contractor, who is well capitalized, but who hasn't purchased the steel by the time the project starts. If there is a default, the surety company will have to find a contractor who can handle those costs, he explained. ■

### Source

Journal of Commerce  
[www.joconl.com](http://www.joconl.com)

في حين تقوم العديد من شركات الإنشاءات في كندا اليوم بأداء جيد، هناك مخاوف من أن لا يكون الانتعاش الاقتصادي قد ثبت جذوره عميقاً بعد. العديد من مشاريع البناء الجارية حالياً أو علو وشك الإنتمام كانت مخططة ومصممة وممولة قبل بدء الأزمة المالية. هناك تغيير اليوم في قطاع الإنشاءات الكندي خاصة أن عدد المقاولين هو على تزايد دائم في حين أن المشاريع قليلة. وقد تصبح هذه الحالة أكثر حدة في حال لم يتم إنتعاش يدفعه القطاع الخاص بمسك زمام الأمور.



## Hollow Metal Doors and Frames from de La Fontaine



**de La Fontaine** is a manufacturer of hollow metal doors and frames based in Canada. Its products are built with hot dipped galvanized or stainless steel and its team of professionals combines the development of creative solutions with manufacturing know-how to provide products that ensure customers' complete satisfaction. de La Fontaine's reputation is built on its expertise, the reliability of its products, and over 30 years of experience in the industry.

The use of forward-looking management practices based on the principles of lean management, combined with

the company's ISO 9000:2000 certification, ensures highly efficient service. Superior quality, value-added products and a rigorous cost control process allow de La Fontaine to offer customized products at competitive prices.

de La Fontaine fire rated products are defined by NFPA 80 "Standard for Fire Doors and Other Opening Protectives". They also comply with UL 10C "Standard Positive Pressure Fire Tests of Door Assemblies", NFPA 252 "Standard Methods of Fire Test of Door Assemblies" and NFPA 257 "Standard on Fire Test of Window and Glass Block Assemblies."

Since de La Fontaine is dedicated to innovation and new product development, the company purchased its own testing facility. Once product development is complete, it performs a final test to receive approval from the independent testing agency Intertek Testing Services (ITS/Warnock Hersey). This is to obtain listing, labeling, and follow-up services for our fire-rated products.

de La Fontaine has developed new revolutionary doors with flexibility and exceptional design possibilities. Its patented inlay process combines steel with other materials such as wood, stainless steel, brass and laminate. Customers can enhance the distinct style of their projects by customizing the design of their doors.

The manufacture of high quality stainless steel products requires experience and an unrivalled mastery of several processes. The performance and finish of de La Fontaine's stainless steel doors will meet the technical, esthetical and artistic requirements of any project. ■

## Accor Group Chooses Aastra as One of Its Worldwide Telephony Providers

**Accor Group**, one of the world's largest hotel groups whose brands include Sofitel, MGallery, Pullman, Mercure, Novotel, Suitehotel, Ibis, all seasons, Motel 6, and Adagio city apart hotel, has signed a three year framework agreement with **Aastra** for the supply of telephone systems and services to the hotel chain on a worldwide basis, except for Etap Hotel and Hotel F1. Aastra was chosen to provide a flexible, scalable and cost-effective platform for the delivery of enterprise telephony services to the company which has more than 4,000 hotels in over 90 countries internationally.

Aastra will enable Accor to offer its hotels a wide range of services and enterprise communications solutions to meet the growing demand for telephony services across the globe. The agreement includes enterprise grade call control managers such as the Aastra 5000 and Aastra MX-ONE.

The agreement with Accor comes just as Aastra has strengthened its offering and support for international customers. The relationship also builds upon the company's successful existing partnership in France and leverages Aastra's extensive global presence.



*Phillipe Lemoel*, Head of Telephony, Accor Group, commented: "We have chosen Aastra because its enterprise telephony solution offers a unique flexibility for our hotels and is proven across global markets. Aastra will provide hotel telecom equipment, including telephony systems and telephone handsets, to our staff working in both small and large hotels. Aastra was able to provide cost effective solutions that met our needs in all our key geographical markets."

*Peter Hofman*, President at Aastra MENA, said: "As more and more companies deliver their Information Technology services on a global scale, Aastra has developed a team dedicated to global accounts to strengthen its large multinational customer relationships and solidify its position as a trusted strategic advisor to companies." ■



## Canada's Marble: From Nova Scotia to the Entire World

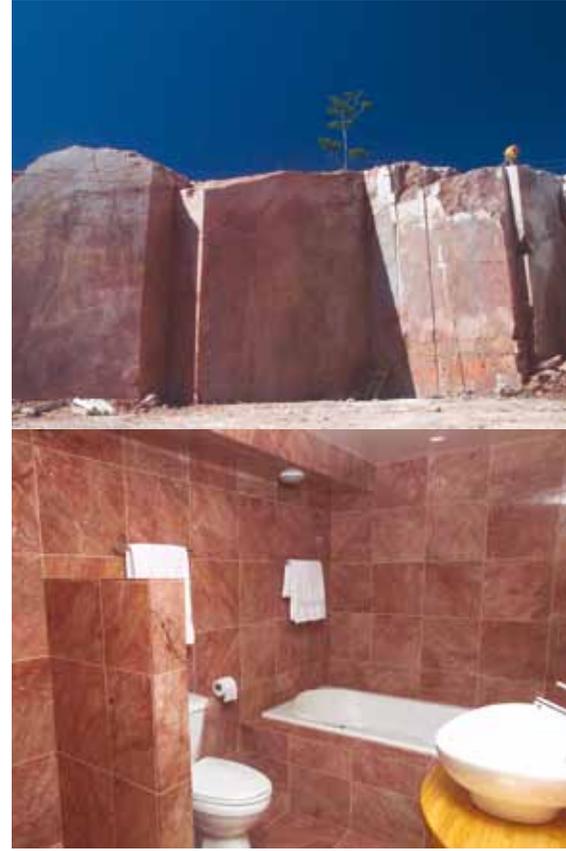
**MacLeod Resources Ltd.** is proud to present Canada's Marble to the world: a collection of rare, ancient, deep red and grey-blue colored marble quarried in Nova Scotia, Canada. The company produces one of the only true red marbles in the world.

The dense crystalline structure of Canada's Marble allows MacLeod Resources to create slabs with both a remarkable high gloss finish, and a soft textured antique finish. The colors, intricate veining, patterns, movement, and combinations of tones and undertones are the characteristics that set Canada's Marble apart and make it an ideal signature product for premiere projects.

MacLeod Resources Ltd. of Canada and **Shairco** of Saudi Arabia are delighted to announce the first stage of their partnership into financing

the supply of high quality colored Canadian marble to the Middle East and to international markets. This opportunity will bring this rare and unique material branded as Canada's Marble to the construction materials industry and both companies are convinced that its striking eye-catching appearance will be well received by architects and the industry in general.

Canada's Marble has been very warmly received and has generated much interest from all over the GCC. MacLeod Resources realizes that this is an exciting, fitting market for Canada's Marble, and will continue to focus much of its attention here. The company has exhibited in Dubai and Abu Dhabi and the overwhelming response to Canada's Marble has kept it actively pursuing this market. ■



## Energy Efficient and Sustainable Spray Foam Insulation Solutions from Icynene

With the center of its operations located near Toronto, Ontario, **Icynene** began as a modest Canadian company with large ambitions. Today, Icynene's influence can be felt in more than 30 countries around the world. With the successful completion of over 300,000 projects, more and more designers and builders are seeing the benefit of embracing energy efficient and sustainable construction materials such as Icynene spray foam insulation solutions.

More than just insulation, Icynene spray foam has been tested and validated as an air barrier material. It expands into cracks, crevices and gaps to reduce air leaks thus providing a more energy efficient and ultimately healthier building because it makes it less vulnerable to pollutants and other contaminants. This makes Icynene spray foam a wonderful solution for medical facilities and hospitals.

Museums have trusted Icynene to in-

surate structures containing precious artifacts—this is especially important in humid climates as Icynene makes a building less susceptible to airborne moisture. Also, a recognized chain of petrol stations in the UAE has experienced drastic changes in indoor temperature and comfort levels by replacing their existing mineral wool insulation with Icynene spray foam. This improvement in energy efficiency allowed for the decrease in air conditioning machinery requirements—a further cost savings.

Icynene offers an array of solutions including spray foams utilizing renewable materials, recycled content and low GWP (Global Warming Impact). Icynene has been involved in and can greatly contribute to points under the various LEED building programs. Icynene is routinely specified in LEED projects ranging from LEED Silver to LEED Platinum.

Icynene products have been ex-



tensively tested and approved by various highly respected agencies around the globe including the Dubai Municipality. After nearly a quarter century, Icynene still continues to invest vast amounts of resources into research & development to bring increased energy efficiency and sustainability to the world's structures. ■



## Elevator and Escalator Components from EHC Global

**EHC Global** is a world leader in the manufacturing and distribution of rubber, thermoplastic and aluminum components for elevators and escalators. Its Canadian manufacturing facility operates under the ISO140001 Environmental Standards. EHC invented the world's first and only escalator handrail that can be recycled.

- Elevator & Escalator Rollers: EHC manufactures 700+ different roller profiles for a wide range of escalators and elevators. EHC rollers are designed for optimum performance and a trouble free operational life – they are constructed with high quality bearings and hubs to reduce noise and vibration.
- NT3000™, The World's Most Popular

Escalator Handrail: NT3000 combines unique aesthetics, durability and ease of installation while being kind to the environment. NT3000 is straighter than other handrails and requires less energy to travel through escalator drive systems - making it the most energy efficient escalator handrail available. Smooth tracking ensures optimum alignment and operation of all handrail drive components. NT3000 is available with an optional antimicrobial additive that will inhibit germs & bacteria. EHC is also able to custom match any color. NT3000 is recyclable.

- D-Flector™ Escalator Safety Brushes: D-Flector is a gentle reminder to escalator passengers to keep



away from the sides of the escalator. It is easy to install and maintain, and meets all escalator safety codes. ■

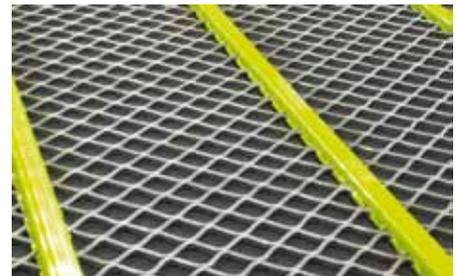
## Flex-Mat® 3 for Modular & Tensioned Screens Increases Screen Capacity & Material Throughput

Flex-Mat® 3 High-Performance, Self-Cleaning Screen Media from Montreal-based **Major Wire Industries Limited** helps operations increase screen capacity and material throughput while reducing downtime. Available for modular or tensioned screen decks, Flex-Mat 3 panels have more open area, providing up to 30 percent more screen capacity than woven wire and up to 50 percent more screen capacity than polyurethane and rubber panels. It employs independently vibrating wires that increase product throughput by up to 40 percent over traditional woven wire or polyurethane panels by increasing open area and eliminating any blinding, pegging and clogging. To date, Flex-Mat 3 is operating in more than 20,000 applications worldwide.

Some aggregate producers are switching to larger screen boxes to gain added capacity. For example, woven wire users have switched from 5' x 16' to 6' x 20' screen boxes, while some modular panel users have expanded from 8' x 20' to 8' x 24' or even 8' x 26' screen boxes. Typically, pro-

ducers can gain the same or more capacity by trying Flex-Mat 3 first and save up to \$50,000 or more in costs associated with purchasing larger screen boxes.

For tensioned screen decks, Flex-Mat 3's signature lime green polyurethane strips align to the screen box's crown bars and hold individual wires in place as they run from hook to hook. Wear life exceeds that of woven wire up to three times because there are no cross wires with high wear spots like there are with woven wire. On modular screen decks, Flex-Mat 3's modular panels install easily, similar to traditional polyurethane and rubber panels. On both screen types, Flex-Mat 3's wires vibrate independently to better separate material, virtually eliminating blinding, pegging or clogging. This minimizes downtime spent cleaning or replacing screen cloth, increasing production time. Flex-Mat 3 is the ideal screening solution in many applications, including aggregate, mining, sand & gravel, aglime, C&D recycle, coal, slag, talc, asphalt, top soil, salt, mulch, industrial minerals and green waste.



Flex-Mat 3 provides benefits on every screen box deck: eliminating near-size pegging on top decks, producing cleaner retained product through the middle decks and preventing fine material blinding on bottom decks. On modular screen decks, Flex-Mat 3 modular polyurethane panels can replace existing screen media on each deck wherever throughput is compromised or can replace the entire deck for maximum production. Flex-Mat 3 tensioned is available in the industry's broadest range of opening sizes—30 mesh to 4 inches—and with the widest range of application-specific wire diameters, enabling Major Wire to fine tune each screen's production to its greatest potential. Flex-Mat 3 is available in the following configurations: a diamond-shaped Series D for most standard applications; wave-patterned Series S for removal of fines; triangular Series T for heavy scalping or fine screening; and Double-Wire for high-impact applications. ■

## Construction Boom in Libya Attracts Foreign Investors

**T**he tremendous growth in Libya's construction sector since 2003, after the UN sanctions were lifted, was unfortunately blunted in 2009 by the global recession. The sector still remains relatively small but growth is expected to return over the following years, and the signs are already there. An imminent construction boom in the country today is attracting international attention. Housing, businesses and infrastructure projects worth US\$ 52 billion are planned.

The Gaddafi regime plans to invest massively in housing and urban development in the capital Tripoli and other Libyan cities. Furthermore, a large tourism development scheme is underway at several sites along the Mediterranean coast. Also businesses are to get their part, with plans to make Tripoli «an international financial hub for the region» by 2012. Bank and office towers are to shoot up in Tripoli.

And of course, all these modernizing attempts would not be complete without beefing up Libya's still limited infrastructure. High-speed railways and first-class roads are to run along the coast, connecting Tripoli with both Egypt and Tunisia. Furthermore, roads and railways are to cut into the sparsely populated Sahara desert, connecting Libya to Chad and Niger in the south. Telecom and electricity are other infrastructure sectors in quick expansion. Most projects, including railway and road construction, have already started, but billion dollar investment schemes are still to be awarded.

In the UK, the construction sector is now opening its eyes towards the great possibilities in Libya as the British market is entering tougher times. In-trade organizations have discovered that «Libya is genuinely looking to the UK for help and support.» with UK companies such as AMEC, Mott MacDonald, Mace and Parsons Brinckerhoff already winning work in the North African country.

However, ambitious plans are sometimes slow to develop because of a lack of experience throughout the supply chain, the UK construction trade organization SECBE warns potential investors. Libya can be a challenging business environment - persistence, patience and optimism are the keys to doing business success-

fully, the organization adds. SECBE is now organizing seminars to assist UK construction companies to get established in Libya.

But not only British investors have eyed the many possibilities in Libya. In Europe, Italians, Greek and Germans are already well established on the southern shore of the Mediterranean. US companies are also among the biggest investors in contemporary Libya.

The Spanish construction sector, one of the biggest in the world before the current deep crisis, has already sought to compensate for the lost Spanish market in neighboring Morocco, where a vast tourism infrastructure is being built. Experiences in the Arab country are now proving valuable as new contacts are made in Libya, and Spanish constructors are quick to establish themselves in Tripoli. But many of the biggest contracts in Libya have already been given to China and Russia. Russian Railways is moving fast ahead with its € 2.2 billion (\$2.86bn) contract to build a 550 kilometer high-speed rail line on the Sirt - Benghazi route. Two even larger rail lines have been awarded the China Railway Construction Corp at an unknown cost.

According to CompaniesandMarkets.com, major projects have continued to focus on Libya's utilities sector as foreign companies have entered the country with the aim of improving infrastructure in relation to energy. A joint venture between Russia's Technopromexport and Libya African Investment Portfolio announced a fund of US\$6.73bn for power projects in Africa, including a 1250km, 400kV transmission line in Libya.

Water sanitation is a key priority, with Daewoo Motor Sales of South Korea, Impregilo Lidco of Italy, Hyflux of Singapore and Punj Lloyd of India



all signing in 2009 multimillion-pound contracts to build networks for drinking water, sewage water and storm water. A water purification and fluid treatment company has won a contract to build two desalination plants in June 2009; Singapore's plants in Tripoli and Benghazi.

Hyflux signed a memorandum of agreement with the commercial arm of the Libyan Ministry of Utilities, General Desalination Company (GDC), which allows Hyflux to jointly invest in and develop two reverse-osmosis desalination plants in Libya. The country improved its score for its business environment, along with fellow oil producer Algeria, which secured the top spot in CompaniesandMarkets.com's ratings.

Despite strong inputs as a result of continued international investment, the country raised a number of concerns for project finance. This was due to weak contract enforceability and unpredictable government intervention, which in turn raised price risks for energy and transport assets, and low scores for the rule of law.

The outlook for Libya remains positive despite the tightening of infrastructure budgets in the region as a result of the global recession, said CompaniesandMarkets.com. Libya's position as an energy exporter guarantees foreign interest in development projects particularly given its proximity to Europe and the recent defrosting of political relations. Large-scale energy projects designed to transfer North African energy resources to energy-hungry European states also offer significant upside potential for growth. The Mediterranean ring project in nearby Morocco and proposed European investment in Maghreb solar power are set to propel future growth. ■

Prepared by ACW staff

قام الرّكود الإقتصادي العالمي العام الماضي بعرقلة النمو الهائل الذي كان يحصل في قطاع الإنشاءات الليبي والذي كان قد بدأ في العام ٢٠٠٣ بعد أن رفعت الأمم المتحدة عقوباتها عن البلاد. لا يزال القطاع صغيراً نسبياً ولكن من المتوقع عودة النمو إليه خلال السنوات المقبلة، هذا وقد بدأت أولى المؤشرات بالظهور. تقوم الفورة في قطاع الإنشاءات اليوم بجذب الكثير من الإهتمام الدولي وهناك مشاريع سكنية ومؤسسات تجارية ومشاريع بنية تحتية بقيمة ٥٢ مليار دولار مخطط لها.

## BAC Corrosion Control Introduces its Libya Branch Office

Cathodic protection and Pin Brazing specialists **BAC Corrosion Control Limited**, based in Telford, UK, are continuing their success with their branch office in Tripoli, Libya.

BAC, who has been established for over 50 years, has worked in the area for over 30 years and the office acts as a centrally located service office for the Libyan market, aiding future expansion within the area. BAC offers cathodic protection products and services as well as Pin Brazing equipment and consumables to the corrosion control and railway industries. BAC has proven success with product categories such as Coatings with Isozin Zinc Tape, Electrical Engineering with specialist Transformer Rectifiers and related technologies, Pipeline Consumables with high potential anodes and manpower services capabilities, Surveyor including Close

Interval Potential surveying equipment, and recently Steel in Concrete where BAC has launched a new range in specialist products for tough concrete environments.

The branch office is managed by *Mr. Michael Timms*, who has spent 25 years working in the cathodic protection industry, working at various levels of hierarchy, starting as Project Engineer, progressing onto Senior Project Engineer and Project Manager, and now as Regional Branch Manager. He has worked on various major projects around the world including the Middle East and the Far East, and with experience working on the Great Man Made River in Libya in the past is ideally suited to manage the office and co-ordinate its activities.

The office mirrors the activities in the UK, offering the same services and



products as the UK based head office. Close links are kept between the UK and Libyan office, to ensure the latest developments and changes to the BAC Corrosion Control portfolio can be offered to all markets, maintaining the excellent service already provided. The company's ISO 9001:2008 certification held by the UK head office is extended to the Libyan branch office ensuring the successful and renowned service offered continues into the future. ■

## Gerba for Architectural Technology Represents Myriad of International Companies

**Gerba for Architectural Technology** was established in Libya in the year 1970 by a unique work team that specializes in importing construction materials. The company currently operates as authorized distributors for a group of global companies which are:

1- **SABIC Innovative Plastics** (producer of Lexan polycarbonate sheets): Lexan polycarbonate sheet is a naturally transparent, "crystalclear" material with excellent aesthetic properties, high impact strength and ease of design and formability.

2- **Arcolux b.v** (Sky lights systems): Under license from Arcolux b.v (The Netherlands) who specializes in producing skylights, domes, pyramids and Vaults. The company can roof in (big) span, self-supporting. With a large assortment of shapes

3- **Momentive Performance Materials** (world leader in supplying construc-



tion silicones & concrete additives): Momentive is the world's second largest producer of silicones, sealants, adhesives and water repellents

4- **Vandeudekom Plastics b.v** (skydomes supplier): The DPI skydomes program provides for many needs and contains many kinds and sizes of skydomes and curbs, several ventilation systems and necessary accessories.

5- **LLumar CPFilms** (window films): LLumar is the world's best-selling brand of glass treatment films, with

a complete line of automotive window tint; commercial and residential architectural window films, safety/security, anti-graffiti, and decorative films.

6- **SHAIR Co** (GRP fiberglass products): SHAIR CO is the largest Gulf producer of GRP products such as counters, light poles & Kiosks.

7- **Ideal Cover** (swimming pools covering): Ideal Cover is the main European supplier of standard and tailor-made swimming pools coverings with different structures.

8- **PolyJohn** (portable showers & toilets): The leader American producer of portable toilets, shower rooms and washing stations.

9- **Stamped Concrete**: Dealers of the American Creative Concrete Concepts, specialized in stamping the concrete.

10- **eubiq**: The GSS system (Ground Sentry Shutter) is a new Global standard for electric power and data Outlets. ■

## Bobcat Wheelsaw Cuts Perfect Trenches in Libya

A fleet of **Bobcat** compact equipment including skid-steer loaders equipped with wheelsaw attachments has excavated over 11 km of trenches for the Libyan Telecommunication Company. The trenches are being dug to lay cable in Tripoli, Zawia, Misurata and Gariyan. The Libyan Telecommunication Company is delighted with the speed, efficiency and cost effectiveness offered by the Bobcat equipment.

Supplied by **Tandamira Company**, the Bobcat dealer for Libya, a Bobcat S250H skid-steer loader with a WS24 wheelsaw and an S175H skid-steer loader equipped with a WS18 wheelsaw are being used to cut the trenches. The project is also utilizing S130 and S150 skid-steer loaders with a sweeper and a BM250 mixing bucket attachment, which is used to prepare and pour concrete for filling the trenches. Other equipment used for cable laying includes Bobcat E32 and E35 compact excavators, the R30S Backhoe and Bobcat HB0880 and HB0980 breakers as well as 7/20 and 7/41 portable compressors and breakers from Doosan Infracore Portable Power.

Working at a rate of 150-180 m/h, the WS24 wheelsaw cuts clean trenches 20 cm wide and up to 60 cm deep. For the complete process of trenching, cable laying, back-filling and concrete pouring as well as the installation of



inspection chambers, the cable laying teams have been able to complete up to 500 m a day in ideal conditions. An inspection chamber has to be installed every 150 m. The initial cut for the inspection chamber is made with a Bobcat wheelsaw and then excavated using the Bobcat E32 or E35 compact excavator.

Tandamira Company, which is headquartered in Tripoli, markets the complete range of Bobcat compact equipment. With a workforce of 25 dedicated personnel, Tandamira Company has branches and service centers in Tripoli and Benghazi. ■

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## Sweden Builds Largest Wind Farm in Europe with 1,101 Giant Turbines

In March, the Swedish government announced plans for the construction of 2,000 wind turbines over the next ten years. The goal is to increase electricity production from renewable energy sources by 25 terawatt hours by 2020. This can be compared with a total electricity production from Swedish nuclear power in 2009 of around 50 terawatt hours. Most remarkable is the giant Markbygden wind farm currently under construction. It will be the largest in Europe with 1,101 Giant Turbines.

Enterprise minister Maud Olofsson explained that the expansion of renewable energy production will be stimulated by applying new quotas in the electricity certificate system. The system will thus be extended to 2035.

Olofsson underlined that Sweden is also in a strong position to rapidly expand electricity production from bio-fuel thermal energy power stations. The minister explained current high electricity prices with the extremely cold winter and large quantities of snow at the same time as several nuclear reactors have been out of service.

Olofsson observed that Sweden currently has the EU's highest proportion of renewable energy production and underlined the government's goal that by 2020 it will meet 50 percent of energy needs

A colossal wind power project currently under construction in the far north of Sweden is expected on completion to generate energy equivalent to the output of two nuclear reactors.

While community opposition often blocks or hampers new wind power projects, Sweden has managed to break ground for Europe's largest wind park counting more than 1,000 giant turbines, with barely a whisper of protest.

The secret? The giant Markbygden wind farm -- covering more than 500 square kilometers, or the equivalent of five times the size of Paris -- is being built in a virtually uninhabited, desolate stretch of Sweden's great north.

"If I were to try the same thing in Germany, it would take me 20 years to get everyone's agreement," Wolfgang Kropp, the German head of the project, told AFP. Standing on the shores of the Baltic Sea at the Piteå harbor near the wind park site,

he added: "For the same area, you would have 10,000 land owners. Here there are three. That's why we came here to Sweden in search of a good location."

Kropp's company Svevind, a client of German wind power giant Enercon, is leading the construction of the park, with 1,101 wind turbines scheduled to be built by 2022. They should then produce energy equivalent to the production of two nuclear reactors. The site stretches across a vast area covered with dense pine forests interspersed with scattered villages of just a handful of brightly painted wooden houses.

The giant wind park is widely popular there. The main forestry, paper and metals industries in the region are facing new environmental and climate regulations requiring them to significantly shrink their carbon footprints by 2020. That is something a change in energy dependence should help with.

"We want to turn this region into a new centre of green energy production," said Robert Bergman of Solander Science Park, a scientific laboratory in Piteå studying among other things the potential of wood and paper-based fuels. The wind park project "is an obvious asset," he added. It is also viewed by many as a new source of income and an incentive for people to stay on in the surrounding, increasingly deserted villages.

Despite the sparse population around the park site, there are nevertheless some dissenting voices. Most opposition comes from the indigenous Samis, who fear the towering turbines will heavily encroach on their reindeer grazing areas, already significantly hit by forestry and tourism in the area.

In late April, the local Sami council re-



fused a compensation package of 5,000 kronor (\$630) per turbine and per year, or a total of more than five million kronor each year after the entire park has been built.

"We say no. The amount does not correspond to the problems that this will cause and the threat it poses to our herds," Anders Ruth, who heads up the local council in Östra Kikkejaure, said. "The same number of reindeer will have to be fed in a much smaller area that will be much more developed," she added. "This will not work and it is not possible to find other grazing grounds." About a quarter of the local Sami grazing areas would be affected by the park, Ruth said.

In an attempt to appease the criticism, the project developers have stressed they will not fence in the area, but some 600 kilometers of new roads through the dense forests will in any case dramatically shrink the area where the reindeer are free to roam. Svevind says it understands the reindeer owners concerns, but that there is no better alternative location for the park.

"It's true, the paper industry has already taken their forests, the dams have already taken their rivers, the mines have taken what's underground. And now it's the wind turbine," said Mikael Kyrk, a Swedish Svevind executive. "But at the same time, that's the way development works." ■

Prepared by ACW staff

كشفت الحكومة السويدية مؤخراً عن خطط لتشييد ٢٠٠٠ توربينة لتوليد الطاقة من الرياح على مدى السنوات العشر القادمة. الهدف هو زيادة إنتاج الكهرباء من مصادر الطاقة المتجددة بنسبة ٢٥ تيراواط ساعة بحلول عام ٢٠٢٠ أي ما يساوي حوالي نصف إجمالي إنتاج الكهرباء من الطاقة النووية في البلاد في عام ٢٠٠٩ والذي بلغ نحو ٥٠ تيراواط ساعة. من أبرز المشاريع هي مزرعة ماركبيغدن الضخمة قيد الإنشاء حالياً والتي ستكون الأكبر في أوروبا مع ١١٠١ توربينة عملاقة.

## New Hybrid Hydrodemolition Robot Introduced by Aquajet Systems

A new diesel/electric-powered hybrid hydrodemolition robot introduced by Swedish specialist company **Aquajet Systems**, offers a wide range of new features, including pollution-free operation in enclosed areas in electric-mode.

Simple 'switchover' operation ensures easy change to diesel power eliminating, for example, the need for electric cables. In electric mode, a 'slow start' electric motor, ensures initial reduced operation accepting full load in up to 5 seconds, thereby preventing power surge failures.

Featuring an optional extended mast height of up to 9 m, the new robot is 20% larger than conventional models and offers larger, adjustable tracks to provide a variable width of between 1.5 – 2.0 m; for increased stability if required.

The hybrid model also incorporates a new type of steering drive to turn and twist the unit's powerhead at the increased heights to provide improved precision.

Aquajet has also developed a multi-axis system allowing the powerhead to be moved quickly, allowing it to work on vertical, curved or horizontal surfaces. The system can also turn the powerhead 180° in the horizontal position.

Additionally, to further speed operation, the robot has been designed to turn through 90° traveling along the



wall surface. This together with the side movement of the powerhead eliminates the constant 'stop-start' turning of the robot.

The robotic units can operate vertically, horizontally and overhead as standard. Attachments allow removal in specialist situations, for example, underneath bridge decks or underwater.

The hybrid Aquacutter features an automated control system that optimizes settings and applies the minimal force required. This allows the robot to operate selectively, with its high pressured jet of water penetrating into the weak concrete as it passes across the surface.

An innovative intelligent sensing controlled system and a patented high-pressure lance control combine to offer high efficiency and performance. The EDS system optimizes the angle of attack as well as ensuring the nozzle remains at the correct set distance. ■

## New compact Häggloader for 7 m<sup>2</sup> Construction and Mining Tunnels

A new compact, rubber-tyred digging arm loader from Sweden's **GIA Industri AB**, the 7HR and 7HR-B Häggloader, has been introduced for use in construction and mining tunnels and drifts with a cross section area of just 7 m<sup>2</sup>.

Designed for operating in tunnels with a width of 2500 mm and a height of 2500 mm, the wheeled loader has a loading capacity of 2.5 m<sup>3</sup>/m.

The 7HR features two unique digging arm systems – digging arms or rotating backhoe - to load the spoil/muck from the tunnel face directly onto the Häggloader's conveyor, which fills the haulage vehicle with a constant supply.

The conveyor can be raised and lowered to suit the loading height of the different haulage vehicles. The backhoe version can also be equipped with a hammer for scaling the blasted profile.

The option of electric or diesel power source is offered for the Häggloader's hydraulic system and for tramming and transportation.

The hydraulic system can be powered by a 45 kW electric motor or a Stage III Deutz 58 kW diesel engine including a silencer and catalytic converter.

The electro-hydraulic drive provides low installation and



energy costs and maintains high air quality due to the absence of diesel exhaust. Diesel-hydraulic drive is used for transportation and also minor digging operations.

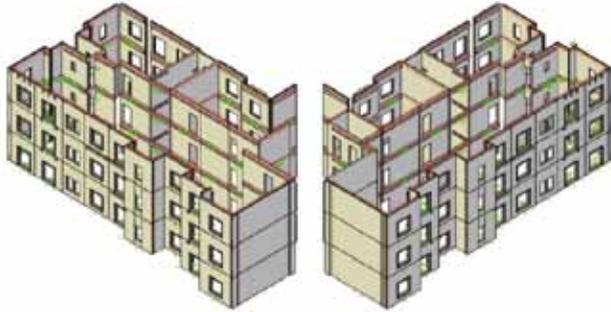
Featuring a 4-wheel traction pull of 7200 hp, the 7HR also offers front and rear axle steering for excellent agility plus the ability to travel sideways in confined spaces.

As an option, a backhoe digging attachment can be easily fitted for trench work. A built-in sprinkler system effectively controls dust.

The Häggloader's chassis and conveyor are made of heavy duty plate joined together with continuous welds for maximum fatigue strength. The digging system can also be repaired with standard sheet steel. ■



## Swedish BIM Software Saves Time and Resources for Concrete Technology in Dubai



IMPACT Precast, design and production model for AI Marjan project, Resort Island, South West of Ras Al Khaimah

**Concrete Technology LLC** is one of the leading precast companies in the UAE, who has completed several larger precast projects in the country. The company has 10,000 highly skilled engineers and semi-skilled labor employees to produce precast and prestressed constructions such as complete structures for buildings up to 10 floors, industrial buildings and warehouses consisting of prestressed con-

crete slabs, hollow core slabs from 150 mm to 500 mm thick, polyslabs and architectural precast concrete claddings.

In 2009 Concrete Technology invested in IMPACT, an AutoCAD application, developed by Swedish company **StruSoft** (Structural Design Software in Europe AB). After a short time of training and implementation in the IMPACT Precast software system, the

engineers were successfully able to master IMPACT and to apply the system to their existing precast projects and managed to reduce drawing production time.

Eng. Louie Abdulla says: "Before, I always had a pressure from our structural engineer when I will complete the shop drawings, but after implementation of IMPACT Precast, I complete all my shop drawings very well before time and wait for the structural engineer to give me more work".

Mr. Abdel Rehman, Design Manager further says: "For the next two years it will be a tough time for all precast factories in Dubai as well as in the rest of the world. There will be some projects, but the competition is going to be high. As far as for Concrete Technology, we have a strategy to provide a complete building industry solution backed up by our proven track record in this region for over a decade. We are certain that we will be able to grab the available projects in this region. We will go full throttle with IMPACT including the new Columns & Beams module." ■

## Volvo Penta Stage 3B/Tier 4i Range 16 Models from 129 to 515 kW

**Volvo Penta** presents a wide range of off-road diesel engines compliant with the upcoming 2011 emission standards. The latest in electronics are combined with robust base engines to give low operating costs and high dependability. The range consists of four base engines at 5, 7, 13 and 16 litre displacement with no less than 16 output options, 129 to 515 kW. Compact dimensions make them easy for OEMs to install in any vehicle.

The range uses SCR-technology that combines increased power and improved fuel consumption by 5-10% compared with today's engines. SCR converts the exhaust NOx into nitrogen gas and water vapour, before releasing them harmlessly through a catalytic converter. The system does this by automatically adding up to 5% AdBlue® to the exhaust gases and then passing this through a catalytic converter.



- 5 and 7 liter: Four cylinder TAD560VE series and six cylinder TAD760VE series engines are both well-balanced to produce smooth and vibration-free operation with low noise level, featured with high torque. The common rail injection and charging system combined with 4-valve technology with low internal losses contributes to excellent combustion and low fuel consumption.

- 13 and 16 liter: At the top of the range are the powerful TAD1360 and TAD1660 series engines at 13 and 16 liters respectively. Maximum power

goes all the way up to 515 kW (700 hp). The base engine is Volvo Penta's robust and well proven in-line six cylinder, with electronic high pressure unit injectors and an electronically controlled waste-gate turbo.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine. ■

## Wates Appointed to Build New Aldar Flagship School



**Wates Construction International** has been awarded the AED150M (\$40M) contract, alongside its joint venture partner **Al Fara's General Contracting**, to build a new 1500-place secondary school for Aldar Academies at Al Bateen in Abu Dhabi.

On completion in mid 2011, the new school will be managed and operated by Aldar Academies, respected as one of the leading education providers in Abu Dhabi. Aldar Academies currently operates three schools in

the city – Al Yasmina School, Pearl Primary School and Al Muna Primary School.

It represents the second educational construction contract that award-winning Wates has won in Abu Dhabi during the past month. It was recently selected to develop a new extension and upgrade existing facilities at the British School Al Khubairat, Abu Dhabi.

Al Bateen Secondary School is set to become Aldar's flagship school and one of the leading educational establishments in Abu Dhabi. Its design concept is based around a less hierarchical educational structure, allowing more student circulation and interaction between different year groups. Measuring 24,000 square metres, the new school will feature state of the art classrooms, a swimming pool, library and extensive outdoor sports facilities. ■

## Doosan Appoints Scott Nelson President for EMEA

**Doosan Infracore Construction Equipment (DI CE)** has announced the appointment of *Scott Nelson* as the new President for the Europe, Middle East and Africa (EMEA) region.

Effective 1 July 2010, Nelson succeeds *Alberto Fornaro*, who, in addition to his position as Chief Financial Officer of DI CE, has served since the beginning of the year as President of the EMEA region.

In 2006, Scott Nelson was appointed President, European Served Area for Bobcat, now part of DI CE, before becoming CEO of Doosan Infracore International in 2008. In this role, Nelson was able to lead the successful integration of the DI CE operations in North America.

Announcing the appointment, *Tony Helsham*, CEO of DI CE, noted: "Scott is uniquely qualified for this role, having presided over the successful establishment of the regional headquarters at Waterloo in Belgium and



the opening of the compact equipment plant in Dobris in the Czech Republic. He has a strong relationship with the staff, the dealers, operations and the markets in the EMEA region." Scott Nelson began his career in 1999 with **Bobcat** and has held various positions including Vice President Marketing North America and Vice President Sales & Marketing North America before becoming President, Bobcat Americas. ■

## Emirates Float Glass Receives CE Mark



**Emirates Float Glass (EFG)** has announced that it has received the CE Mark certification – the regulatory approval to market a product in the European Economic Area (EEA) - for its range of clear, bronze and grey float glass products.

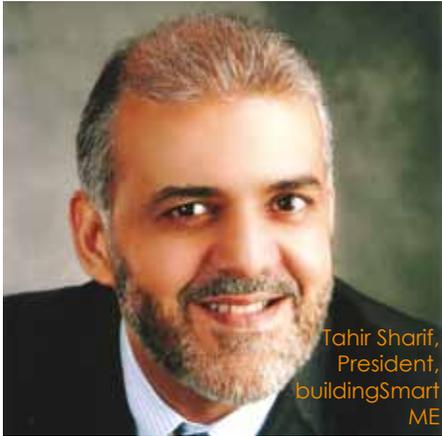
Emirates Float Glass is the first glass manufacturer in the Middle East to receive CE Mark certification for its products.

*Ghassan Mashal*, General Manager of Emirates Float Glass, received the certification on behalf of the company from *Nigel Rees*, CEO of the Glass and Glazing Federation (GGF), the UK-based global trade association representing the glass industry, at a ceremony held in Dubai recently.

"This is an important milestone in EFG's pursuit in becoming a truly world-class company," Mashal said. "The certification allows us to affix the CE Mark – which denotes conformity to the highest standards of quality and safety – on our products and will enable us to market our range of float glass in countries throughout the European Economic Area."

"Since its inception in 2009, EFG has striven to maintain consistently high standards of quality across its product range. Our products are currently exported to more than 35 countries around the world, and the CE Mark approval will allow us to make new inroads into high-potential European markets and further extend our global reach," Mashal added. ■

## buildingSMART ME Survey to Document Current Status of BIM in Region



Tahir Sharif,  
President,  
buildingSmart  
ME

The first ever GCC wide survey on 'Building Information Modeling' (BIM), conducted by **buildingSMART ME**, will be released at this year's buildSMART annual conference, which is being held in Crown Plaza, Yas Island Abu Dhabi from 28 –29 November 2010. The survey is being compiled through interviews with individuals and companies operating in the construction sector across the GCC. This comprehensive survey is designed to docu-

ment the current status of BIM in the region, and senior decision makers within the construction industry can then use the findings to identify better processes for a more efficient, leaner, and greener construction industry. The findings will highlight new opportunities to governments and project owners, allowing them to benefit from the region's BIM momentum in 3D digital modelling. The survey, for the first time, will provide valuable insight into how companies, who have not implemented BIM within their organizations, can derive tangible business benefits. Speed of delivery, reduced costs across the entire project cycle, and lesser environmental impact are just some of the advantages. "The region's construction industry is at a decisive crossroad, and the purpose of the survey is to provide perspective on how companies which are implementing BIM within their organizations are gaining tangible business benefits as a result," said Mr. Tahir Sharif, President, buildingSmart ME ■

## NoteVault Adds Multilingual Dictation for Construction Reporting

# NOTE VAULT®

The Ultimate C.Y.A.®

**NoteVault** announced that it has added the capability to handle multilingual speech input from users on its construction reporting platform. Users can now use their native language to speak their field notes, and NoteVault automatically translates and transcribes into English. Daily construction reports are compiled and displayed in English regardless of which languages went into reporting events and conditions on the job. "Supporting multiple languages has always been in the plan, and we're happy that we now have the ability to support the technology and resources needed to do it right" says Peter Lasensky, NoteVault's CEO,

"We knew that Spanish was essential for U.S. accounts, but found that as we expanded into the Middle East there was an even greater need for translation services. We saw massive building projects with the staff at the job site communicating in Urdu, Hindi, and Arabic. The construction managers were generally speaking and reading only English. There was a unique opportunity to make a connection between those who were "in the know" and those that "needed to know". I'm really excited by the prospect of bridging not only language barriers, but cultural barriers inside our future customers. This really hasn't been possible before." ■

## Enigma Launches New Tracking and Security Product for Trailers



**Enigma Vehicle Systems PLC** has launched a special version of the company's proven SK125 tracking unit designed specifically for trailers, or other unpowered assets, where theft recovery or location information are key requirements. It is therefore ideal for a wide range of trailers within the plant, agricultural and logistics sectors, as well as caravans and horse boxes.

The SK125 TT tracking unit features a long-life battery together with sophisticated battery management software providing approximately 150 days operation based on its own internal battery, working in a low power mode and reporting twice daily. However, when connected to a vehicle, the battery management in the SK125 TT is so efficient, it takes just 2.5 hours to completely recharge and replenish a fully discharged battery. Once recharged, it will report just like any other device attached to Enigma's market leading Skyline remote asset management system. In addition, once connected to an external power supply, the SK125 TT comes to life with fully detailed journey reporting, movement alerts and distance travelled reports. Additionally Skyline users can request positions at any time and achieve a response within just a few seconds. ■

## Paolo Buzzetti, President of ANCE, Speaks about the Italian Construction Sector

**P**aolo Buzzetti, President of the Italian association of private construction contractors (ANCE), joins Samoter in analyzing the situation in the construction market and expectations in the sector. The 28th edition of Samoter, the three-yearly International Exhibition of Earth Moving, Site and Building Industry Machinery, is scheduled to take place 2-6 March 2011 at VeronaFiere.

**On an international scale, the construction market seems to show some timid signs of recovery. What is your impression in this regard?**

The construction market was very badly hit everywhere by the international crisis but the consequences and especially government reactions were different from country to country. For example, Italy - unlike other European countries - did not see the property bubble burst and this is because Italy still has a shortcoming of about 350,000 homes. This does not mean that the crisis spared us in one way or another - it is actually generating devastating effects on the fabric of companies and workers. Last 14 May, on the first anniversary of the general construction states, we simultaneously launched all over the country a cry of alarm that we hope will not remain unheard: in the last year alone, the building industry has lost 137,000 jobs and, if we consider all allied fields, this figure rises to 210,000, while investments in constructions fell by 18%. Yet the worst moment is arriving precisely now: while many companies continued working in 2009 thanks to orders won in previous years, today we are counting the cost of continual cuts in investments and the lack of action which may otherwise have buffered the hemorrhage in the sector by playing an important role going against the trend. And all this while France and Spain - in less than a year - have skillfully and efficiently implemented anti-crisis decisions concerning infrastructures: Spain selected and completed 31,000 medium-small projects worth a total of 8 billion euros and France selected,

funded and finalized small infrastructural projects worth 7.5 billion euros.

**The Italian government's budget does not seem to contain measures that acknowledge the role of the construction sector as the driving force behind recovery. What is Ance asking the government to do?**

The situation in Greece has undoubtedly reminded everyone about the need for more responsibility and sacrifices to ensure the stability of public accounts but, alongside this, we cannot hide our concern over a budget that, in many ways, does not provide many incentives for economic growth. One example above all is the tightening of the stability pact with local authorities. For some time, together with Local Councils, we have asked that the restrictions of this pact be slackened for better-performing local authorities, since they are the main cause of the dire delays in payments by public administration to companies for works already completed. The effect of the budget, on the other hand, will be a loss of investments totaling a further 1.3 billions. It is unacceptable that the costs for balancing public accounts should be borne by construction companies owed money by public administrations and already badly hit by tight credit. Today, we are also asking the government to implement decisions at last capable of inverting the trend in the building industry to support growth and competitiveness of the country: effectively start the development of the Cipe Plan, spending available resources in an efficient manner, launch the Home 1 and 2 plans through the sim-



plification of regulations already announced, apply fiscal levers and ensure transparency and regularity in the work market.

**How do you view the next six months and what are your expectations for 2011?**

Unfortunately, initial data for 2010 does not give us much reason for hope. It is evident that we are still some way from a general turnaround. To get going again, the wind has to blow in our direction in the form of effective action implementing decisions already taken and spending the money already set aside. There is, however, also the possibility of grasping a positive aspect even from this time of crisis that can and must become the occasion for launching a series of vital reforms to modernize the country and make it more competitive. I refer, to mention only one of the most important, to the system of public tenders that sees all the main public and private sector protagonists engaged in the formulation of proposals to modify the current standards with the objective of simplifying them, streamlining procedures, modernizing and improving the efficiency of the administrative machine and preventing disturbance and infiltration by criminal operations. We believe that, with everyone's efforts, the situation can improve - so let's get moving to grasp the recovery right away since we simply cannot allow ourselves to start 2011 still in this situation of stagnation. ■

## New Carpet That Cleans Indoor Air Launched across MENA



A next-generation new carpet is being launched across the MENA region that cleans indoor air, one of the most significant health risks of the modern world.

The new carpet from **DESSO**, the international carpet manufacturer, will be particularly welcomed by the world's estimated 300 million asthma sufferers, who are most at risk from poor indoor air quality.

The most important risk factors for developing asthma are a combination of genetic predisposition and environmental exposure to inhaled substances and particles that may provoke allergic reactions or irritate the airways.

The new carpet from DESSO, AirMaster®, is primarily aimed at offices, hospitals, schools and other public buildings, and will provide important health benefits that other flooring solutions simply cannot match.

DESSO is a leading manufacturer of high quality carpet tiles and broadloom carpets and has been in operation for almost 80 years. It has factories in The Netherlands and Belgium and exports worldwide.

The new carpet significantly reduces the amount of dust and particulate matter floating in the air. Independent tests have confirmed that AirMaster® is eight times more effective in capturing and retaining fine dust than hard flooring – and four times more effective than standard carpeting.

The World Health Organisation has warned that it can be particularly hazardous to inhale particulate matter. Minuscule dust particles settle in the lungs, and the smallest particles can end up in the bloodstream – with potentially serious consequences.

AirMaster® works by reducing the incidence of potentially harmful allergy-producing particles by safely trapping and immobilizing them, guarantees a significant improvement in indoor air quality, and therefore reduces the risk of health-related problems. The carpet is based on patented technology and is specially designed to trap a higher percentage of dust particles than conventional carpet – and significantly more than hard flooring. ■

## Breezair Forges Alliance with Local Air Cooling Experts in UAE



Breezair, the world's innovative natural air cooling technology brand from **Seeley International**, Australia has forged an alliance with local air cooling experts, **ClimaGulf Trading LLC** to launch a range of unique evaporative air-conditioning systems in the UAE.

Making the announcement on 10 July, Dubai-based ClimaGulf Trading LLC said that as a result of the tie-up it has become the exclusive distributor of Breezair (Seeley International) in the UAE. With the size of the Middle East market for air cooling systems estimated at 100,000 units per annum, ClimaGulf plans to tap the UAE market in the initial phase before expanding across the region.

*Mr. Sabu C. Abraham*, Managing Director, ClimaGulf, said: "We are pleased to forge this alliance with a prestigious brand like Breezair, the innovator of natural air cooling technology. Breezair will become a trend-setter for natural air cooling in the UAE, which supports environmentally friendly and energy efficient sources of air-conditioning. Breezair systems use only a fraction of the energy compared to conventional, refrigerative air conditioning. Bringing this world-renowned brand to the UAE reflects our commitment to sourcing the most innovative, environment friendly products from around the world, and offering our discerning customers cooling solutions that helps save energy and money".

Evaporative cooling technology from Breezair is ideal for hot, dry climates like the Middle East, as it cools air naturally, effectively and efficiently. It is a simple process, wherein the cool breeze is created by hot air passing over water soaked cooling pads. Natural evaporation helps soak up the heat and cools the hot air. The effect created by evaporative air cooling is similar to the cooler conditions found at or near large expanses of water.

Breezair evaporative air conditioning is suitable for a range of residential, commercial and industrial applications. ■

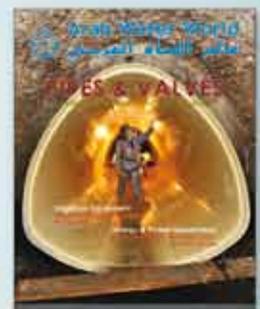
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## Rakeen Completes Structural Work and Block Work on Bab Al Bahr



**Rakeen** has announced that structural work and block work of the Bab Al Bahr project, the centrepiece development of Al Marjan Island, the first man-made island in the emirate of Ras Al Khaimah, are 100 percent complete, while craftsmen have already started working on the external plaster work. Rakeen further revealed that the project remains firmly on schedule with the first wave of six residential buildings to be delivered within the year and various infrastructure facilities expected to be completed in time for the handover.

Bab Al Bahr serves as a gateway to Al Marjan Island, a fully integrated island community that is destined to be a major landmark in Ras Al Khaimah.

Upon completion, Bab Al Bahr will comprise 328 studio apartments, 420 one-bedroom apartments, 172 two-bedroom apartments and 72 three-bedroom apartments.

*Yahia Kambris*, Technical Director, Rakeen, said: "Bab Al Bahr is set to be Ras Al Khaimah's most exquisite, tranquil and naturally breathtaking beachfront address, bringing alive our vision to create the finest in island living. With the excellent pace of construction work, excitement has certainly been building up among all stakeholders of the project, particularly the future home owners of Bab Al Bahr, as the entire community gradually and steadily takes shape by the day." ■

## Five Towers; Five Star Cable

The soon to be completed, billion-dollar Etihad Towers development is set to become one of the most prestigious in Abu Dhabi and **Prysmian's** FP200 Gold is currently being installed in the vast fire alarm system right across the complex.

Consisting of five towers and located on the waterfront at the end of the Abu Dhabi Corniche, the development rises up to 77 storeys at its peak and features a range of amenities, including five star hotel tower, huge shopping mall, 870 luxury apartments and extensive conference center.

The Electrical Project Manager on site commented: "On such a large and important installation as this, with more than 200,000 meters of cable being installed by our electricians, it was imperative that we used the very best fire cable on the market. The Etihad Towers will be a major landmark in the region and so we could not risk using a product that would fail if the worst should happen."



He added: "We also chose to work with Prysmian because we knew we could rely on supply and delivery of such a large cable order when we needed it. Needless to say we are on schedule to complete our work in 3 months time." ■

## Mourjan Establishes Strategic Presence in Black Sea Marina Market



**Mourjan Marinas IGY**, the luxury developer and manager of marinas and yachting lifestyle destinations, announced that it has signed a binding agreement with Russian company **Sochi Grand Marina**, part of leading Russian shipping company, **Sovcomflot**.

The agreement will see Mourjan Marinas IGY undertaking one of the most prestigious marina development contracts in this highly lucrative market with the transformation of the port of Sochi. A new mixed use development at Sochi, including a 300 yacht marina, will help this strategically placed Black Sea port prepare for its role as host city of the 2014 Winter Olympics.

Sochi Grand Marina has commissioned Mourjan Marinas IGY to develop both the new marina and land-based components at the Sochi development. This announcement follows a 12 month period of intense design, technical and business planning. The new vibrant city centre destination at Sochi seaport will also incorporate a long-distance passenger cruise terminal as well as high quality retail, residential and hotel accommodation, catering to the large influx of Olympic related tourism to this historic seafront recreational destination.

The revitalised seaport will be an impressive and welcoming point of arrival for visitors to the city for the 2014 Winter Olympics. ■

## Jumeirah Lakes Towers Successfully Completes Residential Cluster



The 200-hectare Jumeirah Lakes Towers (JLT) free zone administered by the **Dubai Multi Commodities Centre Authority (DMCC)** reached a significant milestone in its ongoing development with the completion of the S Cluster, one of 26 similar Clusters within JLT, which comprises three residential towers and will eventually support approximately 1,400 residents. Cluster "S" offers residents a premium community environment within the JLT, a mixed-use free zone in Dubai with freehold property options. "The JLT development will consist of

87 towers and is well on its way to becoming a vibrant community with the first complete cluster being handed over at Cluster "S," said *Ahmed bin Sulayem*, Executive Chairman of DMCC. "JLT was conceived as a mixed-use development catering to both businesses and residents with the promise of a superior quality of life with its world class infrastructure and living amenities. The completion of this first cluster reinforces this objective and signifies the sustained progress made by DMCC as a master developer to make the JLT free zone the most sought after address for residents and businesses alike." Cluster S boasts landscaping and walkways, promenade seating and retail, surrounding one of the four lakes that will eventually form the hub of activity in the JLT development. The JLT, when complete will house some 140,000 residents. ■

## Schön Properties Reports Impressive Progress on Dubai Lagoon



**Schön Properties**, a leading regional property developer, has reported impressive progress on its 'Dubai Lagoon' project, with the developer crediting its collaborative efforts with contractors and suppliers as the primary driver of the fast-paced construction. The announcement bodes well for Schön Properties' commitment to deliver the project's phases within their stipulated individual deadlines, starting with Zone 1, which is due for completion by the end of 2010. The developer also revealed that it is currently in the process of short listing leading companies to be invited to bid on the infrastructure works, MEP and other finishing works for the project.

Expected to be delivered the earliest, Zone 1 is the closest to completion, with main contractor Bin Sabt revealing that they are expecting to finish building C+10 first, to be followed by C9, H11, and C12 by November. The second batch, which will include buildings C7, C8, C13, and C14 are targeted for delivery by year-end. On Zone 3, main contractor Belhasa is set to commence works on buildings A19 and A23, with plans to construct three to four slabs per month on the entire zone. With a view to complete the full structure within the next 12 months, and the MEP works and finishing 6 to 7 months thereafter, the contractor is confident that the zone will be ready for delivery by the end of 2011. ■

## Hamra Hotels and Resorts Launches Al Hamra Residences

**Hamra Hotels and Resorts** has announced the opening of Al Hamra Residences in Ras Al Khaimah, offering 218 fully furnished apartments. Hamra Hotels and Resorts has also introduced a first-of-its-kind investment concept in Ras Al Khaimah wherein investors owning or seeking to buy any of the residential units in Al Hamra Residences have the option to lease them back to Hamra Hotels and Resorts, which will manage and lease the property on the investors' behalf.

All the apartments in Al Hamra Residences are equipped with plasma screen TVs, cable television channels, kitchen appliances and complimentary high-speed Wi-Fi internet access. The residential units also feature a distinct modern Arabic design and are available in a variety of choices, including studios, 1-bedroom, 2-bedroom, 3-bedroom and four unique 5-bed duplex apartments.



*Toufic El Hajji*, Director of Sales and Marketing, Hamra Hotels and Resorts said: "The opening of Al Hamra Residences marks a valuable addition to Ras Al Khaimah's array of residential developments that complement the emirate's growing reputation as an exciting leisure and living destination in the region. The residential complex, with its distinctive Arabic design elements, creates a unique character and identity of its own and ultimately offers an exclusive living experience for residents." ■

## Tower tech 2010:

# An Exhibition for the High Rise Building Industry

Tower tech 2010 will open on the 20th of September with the participation of elite companies working in tower building and construction, sponsored by **Ramco for Trading & Contracting Co.** and **James Cubitt Engineering Consultants.**

Eng. Islam Moyassar Siddiq, Executive Manager of the organizers **Economic Group** and the project manager Qatar 3rd International Of Building Towers Technology Exhibition, said his company is carrying out intensive preparations for the exhibition that will take place at Doha Exhibition Centre from 20-23 September 2010. He announced this year's exhibition will come to public in a new form with an increased exhibiting area which will allow it to witness an international participation from Spain, Italy, Iran and Pakistan.

The exhibition will include an external display area to showcase heavy machinery used in the construction of the towers by major local and international companies.

Since the exhibition was launched in 2008, engineering conferences and seminars were organized on the side tackling engineering subjects to show the latest technology in tower building in several fields. This year, the seminars will feature effective participation from CTBUH (council of tall building and urban habitat) from the USA. The latest in engineering science will be discussed here.

The Arab Engineering Bureau, one of the outstanding engineering offices in Qatar, will be participating through Dr. Magdy Seven, a specialist and lecturer in the safety and security field, who will speak about achieving the highest standards of security and safety in towers.

The exhibition will be held for the 3rd successive year sponsored by Ramco for Trading & Contracting Co., one of the outstanding local companies in building and constructing high buildings, and James Cubitt Engineering Consultants, the experienced engineering office in the design field. James Cubitt works with the principle that supervision on high buildings as per the highest specifications can achieve Green Buildings Rules.

Siddiq also indicated that the exhibition is considered unique in the world as it is specialized in tower building and construction through all stages. More than twenty thousand specialized visitors from Qatar and the Arabian Gulf are expected.



ينطلق تاوورتك ٢٠١٠ في ٢٠ سبتمبر المقبل بمشاركة نخبة الشركات العاملة في مجال بناء وتشبيد الأبراج برعاية رامكو للتجارة والمقاولات وجيمس كيوبيت للإستشارات الهندسية .

صرح المهندس إسلام ميسر صديق، المدير التنفيذي للمجموعة الاقتصادية ومدير مشروع معرض قطر الدولي الثالث لتكنولوجيا بناء الأبراج، بأن المجموعة الاقتصادية لتنظيم المعارض والمؤتمرات تجري الإستعدادات المكثفة لقرب إنطلاق المعرض في مركز

الدوحة للمعارض من الفترة ٢٠٢-٣٢ سبتمبر ٢٠١٠ حيث صرح أن المعرض هذا العام يخرج للجمهور بزيادة في المساحة ومشاركة دولية من إسبانيا وإيطاليا وإيران وباكستان.

سيضم المعرض مساحة عرض خارجية لعرض المعدات والآليات الثقيلة المستخدمة في مجال بناء الأبراج من قبل كبرى شركات المعدات المحلية والتوكيلات العالمية.

أشار الصديق أن المعرض منذ إنطلاقه في عام ٢٠٠٨ تميز بتنظيم مؤتمر وندوات هندسية مصاحبة تضم مواضيع هندسية لعرض أحدث تكنولوجيا بناء الأبراج في عدة مجالات حيث تضم هذه الندوات هذا العام مشاركة فعالة من قبل المجلس الأعلى للمباني المرتفعة والبيئة المدنية من الولايات المتحدة الأميركية والذي سيعرض أحدث ما توصل له العلم الهندسي في هذا المجال. كما أضاف الصديق بأن المعرض سيكون بمشاركة المكتب العربي الهندسي وهو من أبرز المكاتب الهندسية في دولة قطر وسيتم إستضافة سعادة الدكتور مجدي سيفين المتخصص والمحاضر في مجال الأمن والسلامة المهنية لتحقيق أعلى معايير الأمن والسلامة في الأبراج .

يقام المعرض هذا العام للسنة الثالثة على التوالي برعاية رامكو للتجارة والمقاولات وهي من الشركات المحلية الرائدة في مجال بناء وتشبيد المباني المرتفعة ومكتب جيمس كيوبيت للإستشارات الهندسية ذو الخبرة الهندسية في مجال التصميم والإشراف على المباني المرتفعة وحيث أن المكتب يعمل على أعلى المواصفات التي تحقق قواعد المباني الخضراء.

كما أشار الصديق أن المعرض يعتبر الوحيد من نوعه في العالم المتخصص في مجال بناء وتشبيد الأبراج بجميع مراحلها. ومتوقع زيارة أكثر من عشرون ألف زائر متخصص من قطر ومنطقة الخليج العربي.



## Project Lebanon and Sustainability Week Score Unprecedented Success by Exceeding All Expectations

The 15th international edition of the specialized trade exhibition for construction, building materials, equipment and environmental technology for Lebanon and the Middle East "Project Lebanon" 2010 marked a huge success this year because of its substantial growth in terms of size, participation and visitors' number that reached some 30 thousand industry professionals, making it the reference amidst its peers in the Levant, GCC & Mena Regions.

Once again, the trade fair was staged at BIEL in Downtown Beirut, from the 1st till the 4th of June 2010. Organized by **IFP**, the leading Trade Fair & Events Organizer in the Middle East, the show was held under the auspices of Prime Minister Saad Hariri, the support of the Chamber of Commerce, Industry and Agriculture in Beirut and Mount Lebanon and in collaboration with the Order of Engineers & Architects of Beirut.

Project Lebanon 2010 records this year an outstanding +25% surge in terms of space and participation versus 2009, with more than 600 companies exhibiting from 25 countries.

Chairman and CEO of IFP group, *Mr. Albert Aoun*, noted that the 15th edition of Project Lebanon remains the largest to date, since its official launch in 1995, coinciding with the economic boom that the country is experiencing in its different sectors. "Despite the worldwide economic and financial crisis that severely affected emerging and mature markets, in addition to rich oil based regional economies, the local indicators remain unaffected proving the resilience of our Lebanon economy, with the crisis having little to no effect on the financial, tourism, investment & ever growing real estate sectors." Adding: "The Lebanese Construction activity has significantly expanded in the first four months of 2010 indicating that the area of newly issued construction permits has reached some 5.1 million square meters in the first four months of 2010, up by 56.5% from the same period of 2009."

Concurrently held with Project Lebanon 2010 was the second edition of the Sustainability Week, a specialized conference pertaining to green



construction solutions. Inaugurated by the Minister of Energy & Water Resources, *Engineer Gibran Bassil*, the event was organized by the Order of Engineers and Architects in Beirut and the Lebanese Center for Energy Conservation (LCEC), in cooperation with the ASHRAE Lebanon Chapter and the Lebanese Green Building Council (LGBC).

The inaugural session hosted a special awards ceremony during which 5 important personas were duly honored for their outstanding Green initiatives helping Lebanon acquire green public awareness to better protect & conserve its natural resources.

Renowned Worldwide and local speakers exchanged, debated and discussed urgent environmental matters of which: Climate Change, Green Buildings in Lebanon, Workshop on LEED Ratings and Sustainable Design Practices Sustainable Transportation, the MASDAR Initiative and the Sustainability Challenge, Smart Homes Programme Experience Energy Efficiency Retrofitting of Buildings.

The exhibitors showed great enthusiasm during Project Lebanon 2010, whether diplomatic participating missions, foreign or Lebanese companies and even media partners.

*Mr. Roland van Driessche*, First Attaché of the Wallonia Foreign Trade and Investment Agency (AWEX) of Belgium, revealed his country's intention to expand its participation next year to some 15 companies, after a 4 year absence following the July war in 2006. "Project Lebanon is the

dreamt of occasion that allows us to introduce & market our products; PL also opens new business horizons for our industries and this will translate into tangible results in a few months". From his side, *Mr. Giancarlo Gretti*, the Technical Director of a renowned Italian contracting and woodwork company which installed most of the safe doors & windows in Beirut Central District's major Development-Solidere- explained: "Our stand was constantly busy and packed with people; on daily average we use to host some 55 engineers looking for construction solutions of scale", and concluded: "Our products are guaranteed for 20 years plus that we provide A class consulting services".

*Mr. George Abu Suleiman*, Chairman of the Department of Engineering of ADPI- Aéroports De Paris Ingénierie- Beirut office covering the Middle East highlighted that "The participation in Project Lebanon comes as a great opportunity to meet everyone who works in the construction industry from one hand, and to identify special skilled engineers looking for jobs from another, thus giving the exhibition another economic dimension and adding an employment value". Chairman and Managing Director of **SIKA** Near East, one of the largest Swiss companies for Construction Chemicals noted that "I was pleasantly surprised with the amount of exhibiting countries this year, especially that we have been absent since 2002; Project Lebanon 2010 has exceeded all expectations." ■

**SEPTEMBER 2010**

**QATAR**
**Tower Tech 2010 Qatar's Third International Exhibition for Tower Building Technologies**

20 - 23 Sep, Doha Exhibition Center, Doha - Qatar

**Info:** The Economic Group  
P.O.Box -47127 Front of Al-Osra Book Store Doha, Qatar

**Tel:** + 974 4436300 / 400

**Fax:** + 974 4317438

**Contact:** Eng. Islam Saddiq, Project Manager

**E-mail:**

[isaddiq@economic-group.com](mailto:isaddiq@economic-group.com)

**Http:** [www.towertech-qatar.net](http://www.towertech-qatar.net)


**TURKEY**
**Turkeybuild Ankara 2010**

Building, Construction Materials and Technologies Trade

23-26 Sept, Altinpark Expo Center / Ankara - Turkey

**Info:** The Building Information Centre Fulya Mah. Yeşilcimen Sok. No:12430/ (Polat Kulesi Yanı) 34394 Fulya / İSTANBUL

**Tel:** +90 212 266 70 70

**Fax:** +90 212 266 70 10

**E-Mail:** [info@turkeybuildankara.com](mailto:info@turkeybuildankara.com)

**Http:** [www.turkeybuildankara.com](http://www.turkeybuildankara.com)


**UAE**
**ME Pool & Spa 2010**

26-28 Sept, Dubai International Convention & Exhibition Center, Dubai - UAE

**Info:** Reed Exhibitions

**Contact Person:** Tarek Ali, Show Manager

**Direct:** +971 2 409 0349

**Mob:** +971 50 837 0041

**Tel:** +971 2 444 6113 ext. 132

**Fax:** +971 2 444 3768

**E-mail:** [tarek.ali@reedexpo.ae](mailto:tarek.ali@reedexpo.ae)

**Http:** [www.mepool.com](http://www.mepool.com)


**JORDAN**
**Inter-Build Jordan Fair 2010**

The 3rd Fair and Conference for Building Industry, Architecture, Decoration, HVAC and Mechanical Engineering

27-30 Sept, Zara Expo Halls / Hyatt Amman Hotel - Amman, Jordan

**Info:** Golden Gate for Exhibitions P.O.Box 340, Amman 11941 Al-Jubeiha - Jordan

**Tel:** +96265658501

**Fax:** +96265650085

**E-mail:** [info@jordan-fairs.com](mailto:info@jordan-fairs.com)

**Http:** [www.jordan-fairs.com](http://www.jordan-fairs.com)


**IRAQ**
**Project Iraq 2010**

The 3rd International Trade Exhibition for Construction Technology, Building Materials and Equipment

27-30 Sept, Erbil International Fair

Ground, Erbil - Iraq

**Info:** IFP Iraq (Member of IFP Group)

Al Mashraq Street, Villa #2

Hadiab, Ankawa - Erbil, Iraq

**Tel:** +964 66 2567634

**Fax:** +44 20 71066688

**E-mail:** [info@ifpiraq.com](mailto:info@ifpiraq.com)

**Http:** [www.ifpiraq.com](http://www.ifpiraq.com)


**SPAIN**
**Construtec 2010**

The 11th Building Exhibition

28 Sept - 1 Oct, Feria de Madrid, Madrid - Spain

**Info:** IFEMA, Feria de Madrid

28042 Madrid - Spain

**Contact:** ISG, International Services

Groups, S.R.L.

C/ Princesa, 3 - Duplicado - Planta

13. Oficina 1311

28008 Madrid - Spain

**Tel:** +34 91 292 01 91

**Fax:** +34 292 00 81

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**Http:** [www.ifema.es/web/ferias/construtec/default.html](http://www.ifema.es/web/ferias/construtec/default.html)

**OCTOBER 2010**

**GERMANY**
**Glasstec**

International Trade Fair for Glass

Production, Processing, and

Products

28 Sept- 01 Oct, Düsseldorf Exhibition

Center, Germany

**Info:** Messe Düsseldorf

**Contact Person:** Sebastian Pflügge/

Corinna Kuhn

**Tel:** +49 (0) 211464 4560/ ext: 598

**Fax:** +49 (0) 211464 87 4560/

**Email:**

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[KuhnC@messe-duesseldorf.de](mailto:KuhnC@messe-duesseldorf.de)

**Http:** [www.messe-duesseldorf.com](http://www.messe-duesseldorf.com)


**SAUDI ARABIA**
**Saudi Build 2010**

The 22nd International Construction Technology and Building Materials Exhibition

18-21 Oct, Riyadh International

Convention & Exhibition Center-

RICEC

**Info:** Riyadh Exhibitions Company

P.O.Box 56010

Riyadh 11554, Saudi Arabia

**Tel:** +966 1 2295604

**Fax:** +966 1 2295612

**E-mail:** [info@recexpo.com](mailto:info@recexpo.com)

**Http:** [www.recexpo.com](http://www.recexpo.com)


**TURKEY**
**Baucon Yapex 2010**

18th International Trade Fair for Building Materials, Construction Technology and Building Renovation

28-31 Oct, Antalya Expo Center,

Antalya - Turkey

**Info:** Akdeniz Tanıtım A.Ş.

Metin Kasaboglu Str. No: 634/

07100 Antalya - Turkey

**Tel:** +90 242 316 46 00

**Fax:** +90 242 316 46 01

**Contact:** Mr. Fatih Onkar

**Email:** [fatih@yapex.com](mailto:fatih@yapex.com)

**Http:** [www.bauconyapex.com](http://www.bauconyapex.com)

**NOVEMBER 2010**

**UAE**
**Roadex Raillex**

Exhibition for the road, rail and

public transport sectors

28-30 Nov, Abu Dhabi National

Exhibition Center, UAE

**Info:** IIR Middle East

**Contact:** Richard Pavitt, Exhibition

Director

**Tel:** + 971 4 4072606

**Fax:** +971 4 3353526

**E-mail:** [richard.pavitt@iirme.com](mailto:richard.pavitt@iirme.com)

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Ms. Simone Biock - Marketing Manager  
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تمت الطباعة عند شمس للطباعة والنشر

جميع حقوق النشر محفوظة لسي بي أتش وورد ميديا، لا يسمح بإعادة نشر معلومات إلكترونية أو المطبوعة في مجلة "عالم الإنشاءات العربي" إلا بإذن مسبق من سي بي أتش وورد ميديا

## Rising Operating Costs Drive Energy-Saving Lighting Solutions

With utility bills for commercial buildings throughout the UAE rising by over 50% in the last two years many companies are installing energy-saving bulbs, timers and sensors that can cut electricity costs by up to 80% and reduce carbon emissions.

Furthermore designers and developers throughout the region are now including cost-effective and sustainable lighting solutions in many of the estimated \$2.8 trillion worth of construction projects underway in the GCC to comply with LEED (green building) standards and to position developments favourably in a crowded and highly competitive commercial and office real estate market.

It is the financial as well as environmental issues that are driving energy-efficient lighting solutions. Energy-saving light bulbs use up to 80% less electricity than conventional bulbs as well as saving an average of 9kg of CO2 per year per fitting. LED lighting, meanwhile, can save up to 70% in electricity costs. In addition, timers and movement sensors are increasingly being installed in commercial buildings to save electricity when rooms are unoccupied and corridors are empty. The potential savings for industry from lighting alone is colossal.

Manufacturers are also investing heavily in research and development to produce smart technology to primarily help reduce running costs of lighting in all areas both inside and outside. They also reduce carbon emissions, so it has universal appeal to governments and organisations which are environmentally aware and take responsibility for their carbon footprint.

Commercial and industrial businesses in Dubai were shocked at the end of the first quarter back in 2008. When they received their utility bills many found that the cost of their electricity had increased by as much as 65% as Dubai moved to curb excessive consumption.

A new tariff structure introduced on March 2008 by Dubai Electricity and Water Authority (DEWA) - aimed at encouraging energy consumers to use less by paying more - meant their annual energy bills of around 2.5 - 3 million AED (680 - 817 thousand dollars) rose by almost 2 million AED (545 thousand dollars).

Just imagine the potential savings for a manufacturing facility. Lighting is taken for granted everyday but the annual Earth Hour in March is a reminder of the global importance of conserving energy. This is a relatively untapped but growing market in the Middle East, as governments and business look for sustainable alternatives.

Anita Mathews, Exhibition Director of Middle East Electricity

## ارتفاع تكلفة الطاقة تدفع الشركات في المنطقة لتبني حلول توفير إستهلاك الكهرباء



مع ارتفاع فواتير الكهرباء للمباني التجارية في أنحاء الإمارات العربية المتحدة بأكثر من ٥٠٪ خلال العامين الماضيين، قامت شركات عديدة بتركيب مصابيح موفرة للطاقة ومؤقتات وحساسات يمكنها توفير تكاليف الكهرباء حتى ٨٠٪ وكذلك تخفيض انبعاثات الكربون.

فضلاً عن ذلك يقوم المصممون والمطورون عبر المنطقة حالياً بتبني حلول إضاءة إقتصادية ومستدامة في العديد من المشاريع الإنشائية الجاري تنفيذها بقيمة تقدر بحوالي ٢.٨ تريليون دولار لتتوافق مع معايير الأبنية الخضراء ولتمييز المشاريع عن بعضها البعض وعن السوق العقارية التجارية والمكتبية العالية التنافس.

إن العوامل المالية فضلاً عن البيئية هي التي تقود الإنتشار المتزايد لحلول الإضاءة الموفرة للطاقة. توفر المصابيح الكهربائية الموفرة للطاقة الكهربائية حتى نسبة ٨٠٪ مقارنة بالمصابيح التقليدية إضافة إلى توفير حتى ٩ كغ من غاز ثاني أكسيد الكربون لكل مصباح. إضافة لذلك يتم بصورة متزايدة تركيب مؤقتات وحساسات حركة في المباني التجارية لتوفير الطاقة حينما تكون الغرف والمرات فارغة، وبالتالي فإن نتائج التوفير تصبح عالية جداً. كما تستثمر الشركات بقوة في الأبحاث والتطوير لإنتاج تكنولوجيا ذكية للمساعدة في تخفيض تكاليف التشغيل للإضاءة في جميع المناطق داخل المباني وخارجها، كما أنها تخفض الانبعاثات الكربونية وحتى تقدم نفسها أيضاً بصورة إيجابية أمام الحكومات والمنظمات بكونها واعية لمسؤولياتها البيئية.

وكانت الشركات التجارية والصناعية في دبي قد أصيبت بصدمة في الربع الأول من عام ٢٠٠٨ حينما إستلم بعضها فواتير الكهرباء وقد إرتفعت بنسبة حتى ٦٥٪ مع توجه حكومة دبي إلى الحد من الإستهلاك المفرط. وكانت الصيغة الجديدة لتعرفة الكهرباء التي طُرحت في مارس ٢٠٠٨ من قبل هيئة كهرباء ومياه دبي - والتي هدفت لتشجيع مستهلكي الطاقة على ترشيد الإستهلاك حسب نظام الشرائح - تعني أن فواتير إستهلاك الشركات التي تتراوح بين ٣-٢,٥ مليون درهم سنوياً (٦٨٠-٨١٧ ألف دولار) قد إرتفعت بنحو ٢ مليون درهم (٥٤٥ ألف دولار).

يؤمن إستخدام حلول الإضاءة الذكية في المنشآت الصناعية توفيراً هائلاً في التكاليف. تعتبر الإضاءة من الأمور التي ينظر إليها بصورة إعتيادية، إلا أن ساعة الأرض التي يحتفل بها العالم في شهر مارس من كل عام هي تذكير بمدى أهمية توفير الطاقة. هذه سوق لا تزال في مراحلها الأولى في منطقة الشرق الأوسط إلا أنها تحمل إمكانات كبيرة مع توجه الحكومات والشركات نحو تبني بدائل مستدامة.

أنيتا ماثيوس مديرة معرض كهرباء الشرق الأوسط

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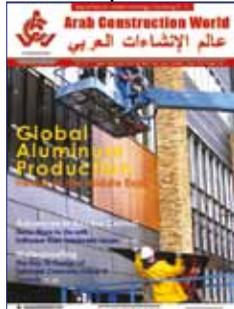
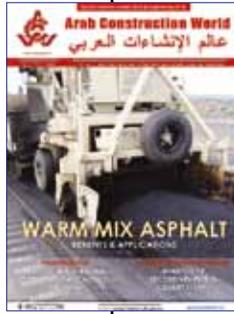
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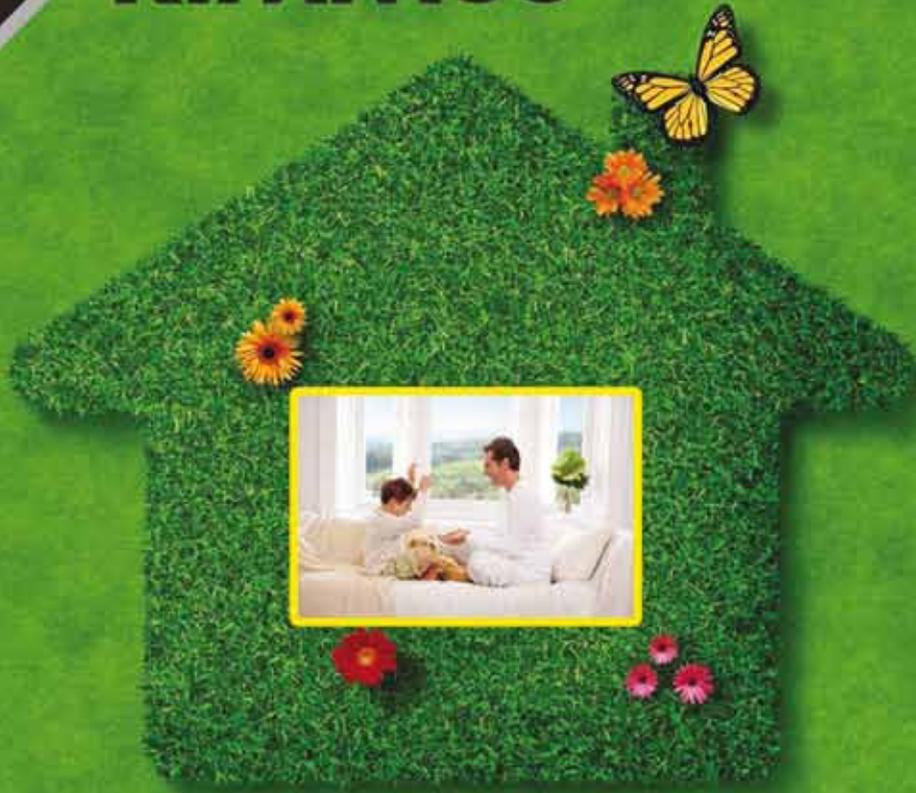
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