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international construction

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KHL OFFICES

UNITED KINGDOM (HEAD OFFICE)

Southfields, Southview Road,
Wadhurst, East Sussex TN5 6TP, UK.
Tel: +44 (0)1892 784088
Fax: +44 (0)1892 784086
www.khl.com

USA OFFICE

KHL Group Americas LLC
3726 East Ember Glow Way,
Phoenix, AZ 85050 USA
Tel: +1 480 659 0578
e-mail: americas@khl.com

SOUTH AMERICA OFFICE

KHL Group Americas LLC
Los Militares 5620, of 909. Las Condes
Santiago, Chile
Tel: +56 2 2885 0321
e-mail: cristian.peters@khl.com

CHINA OFFICE

KHL Group China
Room 768, Poly Plaza, No.14, South Dong
Zhi Men Street, Dong Cheng District,
Beijing 100027, P.R. China.
Tel: +86 (0)10 6553 7678
e-mail: cathy.yao@khl.com

KHL SALES REPRESENTATIVES

ADVERTISEMENT MANAGER and BELGIUM/THE NETHERLANDS/INDIA

Alister Williams, UK Head Office
Tel: +44 (0)1892 786223
e-mail: alister.williams@khl.com

CORPORATE ACCOUNT MANAGER

David Stowe, UK Head Office
Tel: +44 (0)1892 786217
e-mail: david.stowe@khl.com

GERMANY/AUSTRIA/SWITZERLAND/ EASTERN EUROPE

Simon Battersby, UK Head Office
Tel: +44 (0)1892 786232
e-mail: simon.battersby@khl.com

CHINA

Cathy Yao
Tel: +86 10 6553 7678
e-mail: cathy.yao@khl.com

FRANCE

Hamilton Pearman
Tel: +33 1 45 93 08 58
e-mail: hpearman@wanadoo.fr

ITALY

Fabio Potestà
Tel: +39 010 570 4948
e-mail: info@mediapointsl.it

JAPAN

Akiyoshi Ojima
Tel: +81 (0)3 3261 4591
e-mail: ojima@media-jac.co.jp

KOREA

CH Park
Tel: +82 2 730 1234
e-mail: mci@unitel.co.kr

NORDIC COUNTRIES

Peter Gilmore
Tel: +44 (0)20 7834 5559
e-mail: peter.gilmore@khl.com

TURKEY

Emre Apa
Tel: +90 (0)532 324 36 16
e-mail: emre.apa@apayayinciilik.com.tr

SPAIN

Mike Posener
Tel: +353 86 043 1219
e-mail: mike.posener@khl.com

UK

Lynn Collett, UK Head Office
Tel: +44 (0)1892 786219
e-mail: lynn.collett@khl.com

USA/CANADA

Jonathan Cervero
Tel: +1 312 929 3247
Fax: +1 312 624 8673
e-mail: jonathan.cervero@khl.com

CLASSIFIED SALES

Paul Watson, UK Head Office
Tel: +44 (0)1892 786204
e-mail: paul.watson@khl.com

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COMMENT

If you are an equipment manufacturer, you would probably be wishing for a different picture for global engine emission laws. As I discuss in this month's feature on wheeled loaders, the different legislation in place around the world means manufacturers have to build two or three separate ranges to serve their customers.

This used to be a softer issue in the days of Tier 3 and Stage IIIA and earlier laws being in force in Europe, Japan and North America. As long as fuel quality was reasonable these machines could be run anywhere in the world. However, the exhaust aftertreatment required for the current crop of legislation in these developed parts of the world means that is not possible anymore. Without the use of ultra low sulphur diesel, which is only generally available to construction equipment owners in Europe, Japan and the US, these sensitive pieces of emissions control technology will clog up with particulate matter, causing the engine to overheat and break down.

So manufacturers have been forced to make a second range of machines for countries where there are less stringent regulations in place, using the equivalent of Tier 2 or Tier 3 engines. Some also produce a third range for sale in countries where there are no emissions laws for this type of equipment.

This may not be ideal for manufacturers, but I would argue that it serves customers much better. As well as changing engines, manufacturers are now building features into their machines that are designed to meet the needs of local markets much better. Indeed, many have gone as far as to produce machines for emerging markets that do not have an equivalent in developed countries because a specific need or requirement for a particular class of machine has been identified. There is more on some of the new wheeled loaders that come under this category in this month's feature.

And there is good reason for this. As our latest video presentation on global construction markets explains – see the Video Zone section of www.khl.com – growth in construction output is much more robust in emerging markets than it is in the developed world. This is a trend that will continue for the foreseeable future, as emerging countries focus on construction-heavy activities such as infrastructure development and the building of affordable housing to drive growth and improve the standard of living for their citizens.

Maybe 10 or 20 years ago global manufacturers didn't get too excited about emerging countries. Demand was small compared to the developed world, many sales would have been of used equipment and only a handful of customers would have been in the market for a new machine. And that new machine could easily have been a variant on what was being produced for Europe or North America.

But years of growth have seen these countries become more significant, warranting the research and development of new machines. What's more, many manufacturers see them as the markets of the future, and a lot of industry forecasters would agree.

Chris Sleight
Editor



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STAFF LIST

Editor

Chris Sleight BEng (Hons)
e-mail: chris.sleight@khl.com
direct tel: +44 (0)1892 786205

Deputy Editor

Helen Wright
e-mail: helen.wright@khl.com
direct tel: +44 (0)1892 786209

Editorial Director Paul Marsden BSc
Editorial Team Lindsey Anderson, Clarise Arduz, Alex Dahm, Lindsay Gale, Sandy Guthrie, Laura Hatton, Cristián Peters, Murray Pollok, D. Ann Shiffler, Anna Sun, Euan Youdale

Advertisement Manager

Alister Williams
e-mail: alister.williams@khl.com
direct tel: +44 (0)1892 786223

Corporate Sales David Stowe
e-mail: david.stowe@khl.com
direct tel: +44 (0)1892 786217

Area Sales Lynn Collett

Classified Sales Manager Paul Watson
Production & Circulation Director

Saara Rootes

Production Manager

Ross Dickson
e-mail: ross.dickson@khl.com
direct tel: +44 (0)1892 786245

Design Manager Jeff Gilbert
Designer Gary Brinklow

Design/Production Assistant

Pippa Smith
e-mail: pippa.smith@khl.com
Direct tel: +44 (0)1892 786207

Production Assistant

Louise Kingsnorth
e-mail: louise.kingsnorth@khl.com
Tel: +44 (0)1892 786246

Financial Controller Paul Baker

Financial Assistant Gillian Martin

Credit Control Josephine Day

e-mail: josephine.day@khl.com

direct tel: +44 (0)1892 786250

Office Manager

Clare Grant
e-mail: clare.grant@khl.com
direct tel: +44 (0)1892 786201

Business Development Director

Peter Watkinson

Circulation Manager

Theresa Fox
e-mail: theresa.fox@khl.com
direct tel: +44 (0)1892 786238

Circulation & Subscriptions Executive

Hayley Gent
e-mail: hayley.gent@khl.com
direct tel: +44 (0)1892 786233

Publisher

James King

MEMBER OF



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HIGHLIGHTS

RUSSIA A £ 10 billion (US\$ 15.4 billion) residential development project in St Petersburg covering over 900 ha has been launched. Scheduled to take 15 years to complete, consultant Turner & Townsend has been chosen by developer SPb Renovation to help deliver the project, which involves constructing 1,200 new buildings across 22 sites around the city.

SUDAN A new international airport on the outskirts of the capital, Khartoum, is to be financed with a US\$ 700 million loan from China, according to Sudan's state news agency. Construction of the airport, which is planned to include an 86,000 m² passenger terminal and handle 6.8 million passengers a year, is due to start at the end of 2013 and last three years.

VIETNAM The Asian Development Bank has approved a US\$ 410 million loan to support construction of the Second Southern Highway, connecting Ho Chi Minh City in Southern Vietnam to the Mekong Delta and southern coastal regions. Construction will include two cable-stayed bridges with a combined length of 5 km, as well as access and interconnecting roads totalling 26 km.

US Employment in the US construction industry hit its highest level since 2008, according to data for June from the US Bureau of Labor. The total headcount increased +3.4%, to 5,812,000 year-on-year in June, while unemployment fell to 9.8% from 12.8% in June 2012—the first time the rate has fallen below double digits since 2008.

EUROPE Contractors are increasingly looking outside the region for growth, with 65% of respondents to a survey by QBE of over 500 businesses planning to expand their operations into new countries over the next five years. 32% of respondents planned to expand in Asia and South America, and 20% in Africa.

AFRICA The World Bank is to provide US\$ 340 million in funding for East Africa's Regional Rusumo Falls Hydroelectric Project, which will provide power to Burundi, Rwanda and Tanzania. The 80 MW project is located 97 km west of Lake Victoria, Africa's largest lake by area, which borders Tanzania.

GLOBAL

Saipem battles corruption allegations

Former executive arrested amid Algeria probe, while company fined for separate offenses in Nigeria

Oil and gas contractor Saipem faces corruption investigations relating to alleged offenses in Algeria, financial penalties over a historic case in Nigeria and a probe into accounting irregularities.

In August, Pietro Varone, a former head of its engineering division, was arrested in Italy over a bribery investigation relating to Algerian gas contracts. Nearly € 200 million (US\$ 266 million) in bribes is alleged to have been paid to officials in Algeria.

Saipem and its parent company Eni have denied any wrongdoing in Algeria, and said an internal investigation found no evidence of payments to public officials in the country.

At the same time, Saipem has also entered into a so-called "tolling agreement" with the US Department of Justice. This extends the limitation period under which it could be held liable for violating federal laws by six months. However, it said this did not constitute an admission of guilt.

Meanwhile, a subsidiary of Saipem was found guilty by a Milan, Italy court of separate corruption offenses in Nigeria. The decision resulted in the seizure of € 24.5 million (US\$ 32.6 million) pending an appeal, and a € 600,000 (US\$ 800,000) fine.

The case relates to Saipem's Snamprogetti Netherlands business, which was part of the TSKJ consortium that bribed Nigerian public officials over a decade in order to win contracts to build liquid natural gas plants on Bonny Island, Nigeria. Saipem said it would evaluate the justification for the new ruling in Milan, and would appeal.

This news also comes as Italian market securities regulator Consob started separate procedures to sanction Saipem after uncovering irregularities in its 2012 accounts.

Saipem revised its 2013 earnings guidance and its outlook for 2013 at the start of this year, but Consob said it had found evidence of a number of violations including a delay in announcing January's profit warning to the market.

GLOBAL

Equipment market growth forecast

The global construction equipment market will see average annual growth of +6% between 2012 and 2017, according to market research company The Freedonia Group. The value of the sector will rise from US\$ 142 billion in 2012 to US\$ 189 billion in 2017.

According to Freedonia, the strongest growth will be in the Asia-Pacific region, where the market for equipment will grow an average of +8.3% per year to US\$ 93.4 billion by 2017. This is more than double its value of US\$ 40.6 billion in

2007, and will represent almost half of global demand.

All other regions are expected to see growth below the +6% global average. The strongest will be Africa and the Middle-East, where the market is expected to see an average annual rise of +5.5%, to reach US\$ 9.6 billion by 2017.

Western Europe is also forecast for relatively strong growth of +5.1% between 2012 and 2017. However, this was the weakest region of the world in the crisis years, with a -3.4% annual average decline

between 2007 and 2012. This means that at US\$ 23.1 billion, the value of its construction equipment market in 2017 will only just be above the 2007 level of US\$ 21.4 billion.

In North America, growth will average +2.9% per year to 2017, bringing sales to US\$ 47 billion.

Latin America is set for a +4.6% annual average increase, taking the sector to US\$ 8.3 billion by 2017. Eastern Europe, including Russia, will rise +4.7% per annum to US\$ 7.7 billion by 2017.





US

Mixed output messages

Construction output in the US for the 12 months to June was up +3.3% year-on-year at US\$ 884 billion, according to the Census Bureau. However, this was down -0.3% from the rolling annual total to May 2013 of US\$ 889 billion.

Although residential construction was up +17.6% compared to a year ago to US\$ 338 billion in June, it slipped -0.1% compared to the end of May. In contrast, non-residential construction was down -4.0% year-on-year in June, and -1.0% compared to May's total.

Publicly-funded construction in the US continued to fall in June, with the value of this sector of the market falling -9.3% compared to a year ago to US\$ 261 billion. In contrast, privately-funded construction was up +9.7% compared to a year ago, at US\$ 622 billion.

Ken Simonson, chief economist at the Associated General Contractors of America (AGC) said, "The largest public categories – highways and education construction – are now plummeting at double-digit rates."

CHINA The 632 m Shanghai Tower in the city's Lujiazui commercial district became the second tallest building in the world behind the 828 m Burj Khalifa in Dubai, UAE, when it topped out in August. Designed by architect Gensler, the building is scheduled to open in 2014. It is supported by 831 reinforced concrete foundation piles and a 6 m thick mat foundation containing 61,000 m³ of concrete. For more on the latest developments in skyscrapers around the world, go to the High Rise feature on page 25.

AUSTRALIA

Corruption settlement

The World Bank has reached a settlement agreement with engineering contractor Sinclair Knight Merz (SKM) after the company self-reported corrupt misconduct relating to Bank-financed projects in the East Asia and Pacific region.

SKM and its parent companies and subsidiaries have been sanctioned with conditional non-debarment for two and a half years. This means that, as long as the companies fulfil certain conditions such as the implementation of a more robust compliance programme and further co-operation with the World Bank, they will remain eligible to bid for Bank-financed projects.

The World Bank said the nature of the sanction reflected SKM's voluntary acknowledgment of corrupt misconduct.

SKM has also fired key individuals connected with the illegitimate payments. The company initiated an internal appropriate-business-practices policy, and took steps to improve its governance and compliance procedures.

Leonard McCarthy, World Bank vice president of integrity, said, "The World Bank took into account SKM's co-operation and willingness to provide evidence in support of further investigations."

As a result of the co-operation received from SKM, the World Bank said it was able to take steps to safeguard its funds and also identify other potential targets for investigation.

DIARY DATES

2013

Matexpo 2013

September 4 – 8, 2013
Kortrijk, Belgium
www.matexpo.com

Bauma Africa 2013

September 18 – 21, 2013
Johannesburg, South Africa
www.bauma-africa.com

International Construction Equipment Congress

September 19 – 20, 2013
Istanbul, Turkey
www.vision2023turkey.org

BICES 2013

October 15 – 18, 2013
Beijing, China
www.e-bices.org

International Construction Economic Forum (ICEF)

November 20 – 22, 2013
Amsterdam, the Netherlands
www.khl.com/icef

Excon 2013

November 20 – 24, 2013
Bangalore, India
www.excon.in

MS Africa & Middle East

December 9 – 12, 2013
Cairo, Egypt
www.msafrika.net

2014

Intermat Middle East

January 14 – 16, 2014
Abu Dhabi, UAE
www.intermatme.com

World of Concrete

January 21 – 24, 2014
(Seminars 20 – 24 January)
Las Vegas, US
www.worldofconcrete.com

ConExpo-Con/Agg 2014

March 4 – 8, 2014
Las Vegas, US
www.conexpoconagg.com

SMOPYC 2014

April 1 – 5, 2014
Zaragoza, Spain
www.smopyc.com

US

Record pipeline

Technip has won a contract from Shell to lay the world's deepest gas pipeline in the US Gulf of Mexico. The pipeline is part of the sub-sea infrastructure for the Stones field in the Walker Ridge area of the Gulf, where the water is some 2,900 m deep.

Technip will be in charge of installation of the subsea gas production system and gas pipeline, including associated project management, engineering and stalk fabrication. The scheme will be overseen from Technip's operating centre in Houston, Texas, US, with fabrication taking place at its facility in Mobile, Alabama, US. The offshore installation is expected to be performed in the second half of 2014 by the Deep Blue, Technip's deepwater pipelay vessel.

David Dickson, Technip's senior vice president for the North America region, said, "With greater depths come greater challenges for our clients and we are delighted to help Shell push back subsea frontiers by laying the deepest gas pipeline worldwide. With the award of this high-profile project, Technip confirms its subsea leadership and keeps differentiating itself through innovation to remain at the forefront of frontier projects."

US

Exports fall

US exports of construction equipment were down -21% in the first half of the year, according to data from the Association of Equipment Manufacturers (AEM). The value of machines shipped stood at US\$ 10.8 billion to the end of June, compared to US\$ 13.7 billion for the first six months of 2012.

Exports to Central America saw a +15% increase, but sales to Europe were down -20% to US\$ 1.4 billion, Asia was down -24% to US\$ 1.2 billion, South America dropped -13% to US\$ 1.9 billion, Africa fell -20% to US\$ 654 million and Australia & Oceania plummeted -62% to US\$ 750 million.

GLOBAL

Currency changes hit construction costs

Hong Kong comes top as most expensive country to build in, India is cheapest

Currency fluctuations were the dominant factor in driving relative construction costs over the last 12 months, according to the findings of a study of building costs in 47 countries by consultant EC Harris.

It found that the ten most expensive countries to build in are Hong Kong, Switzerland, Denmark, Sweden, Macau, Australia, Japan, France, Singapore and Belgium. In Hong Kong, the most expensive of all, construction costs are 1.42 to 1.68 times what they are in the UK – the benchmark EC Harris uses.

The cheapest countries are India, Indonesia, Vietnam, Morocco and Malaysia. In India, the cheapest of all, costs are just 0.29 to 0.34 what they are in the UK.

EC Harris said the fall of the Japanese Yen and Australian Dollar along with the appreciation of the Chinese Yuan have had a significant impact on costs.

Simon Rawlinson, head of strategic research and insight at EC Harris, said, "The appreciation of the Chinese Yuan not only makes Chinese imported materials to other countries more expensive, but has also contributed to China moving nearly half way up the global (cost) rankings."

On the other hand, the consultant said the fall in demand commodities in many emerging markets had seen other costs drop, particularly those for metallic building materials.

Mr Rawlinson added, "With new sources of supply coming on stream, investment houses moving away from the commodity markets and a substantial reduction in the growth rates of the BRICS it is not surprising that prices have fallen in the short term."

SAUDI ARABIA The Arriyadh Development Authority has awarded three contracts totalling US\$ 22.5 billion for the construction of a 176 km, six-line metro network in the Saudi Arabian capital, Riyadh. At US\$ 9.5 billion, the largest contract was awarded to the BACS consortium led by US contractor Bechtel to design and build lines one and two, covering 63.3 km. Spain's FCC leads the FAST consortium which was awarded a US\$ 7.8 billion contract to deliver lines four, five and six – covering 72.5 km. A further US\$ 5.2 billion contract was awarded to the Arriyadh New Mobility consortium, which consists of Salini Impregilo, Ansaldo, Bombardier, Larsen & Toubro and Nesma. These companies will build the longest line of the new underground network, the 40.7 km line three. The network will feature 85 stations, and operate with driverless electric trains. Construction is scheduled to begin in the first quarter of 2014.



CHINA

Suspended sentence

Liu Zhijun, China's Minister for Railways from 2003 to 2011, has been given a death sentence suspended for two-years for bribery and abuse of power in connection with construction of the country's high-speed rail network.

The Beijing court also "Deprived his political right for life and confiscated all his personal property", according to state media reports. Suspended death sentences in China that include a two-year reprieve are usually commuted to life imprisonment. The court's verdict is likely to require Mr Liu to spend at least ten years in jail.

The sentence follows Mr Liu's guilty plea to accepting bribes.

Mr Liu admitted to accepting bribes including CNY 64.6 million (US\$ 10.5 million) in cash and CNY 800 million (US\$ 130 million) in property between 1986 and 2011 in exchange for construction contracts.

RUSSIA

World cup spend

Some RUR 664 billion (US\$ 20 billion) is expected to be spent in Russia over the next five years in preparation for the 2018 FIFA football World Cup. This money will come from federal and regional funds as well as through private investors, according to a report from research company PMR.

It said it would be a huge challenge for Russia to develop the nine stadiums for the tournament ahead of the deadline at the end of 2017.

The total spend excludes infrastructure schemes being built ahead of the tournament, which come under a different programme – Development of Russia's Transport System 2010 to 2020.

By the time of the tournament, the motorway connecting Moscow and St Petersburg will have to have been constructed, and the Don, Ukraine, Ural, Kaspiy, Volga and Russia federal highways will need to have been modernised.

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BUSINESS HIGHLIGHTS

LIBYA A € 963 million (US\$ 1.3 billion) contract to construct the first 400 km section of a 1,700 km coastal motorway in Libya has been awarded to a consortium led by Italian contractor Salini Impregilo (58%). The consortium also includes La Società Italiana per Condotte d'Acqua and contractors Impresa Pizzarotti & C and Cooperativa Muratori & Cementisti.

FRANCE Mecalac CEO Georg Sick is to depart from the manufacturer after just over two years. The split is described as amicable and is said to be due to differences with executive chairman Henri Marchetta over strategy. Mr Marchetta will resume his former role as CEO of the company.

INDIA Materials producer CRH's 50:50 joint venture in India, MHIL, has acquired 3.2 million tonnes-per-year cement producer Sree Jayajothi Cements for INR 1,400 crore (US\$ 233 million). MHIL and Sree Jayajothi are both located in Andhra Pradesh in South India, and CRH said the deal would create a market leader in the region.

BRAZIL The first Shandong Lingong Construction Machinery (SDLG) production facility outside China has opened. Manufacturing has started at the company's excavator factory in Brazil – a US\$ 10 million assembly hall within the Volvo CE facility in Pederneiras, São Paulo. SDLG is Volvo CE's Chinese joint venture.

EUROPE

Holcim and Cemex reshuffle

Assets to be swapped in Germany and Czech Republic, along with new joint venture in Spain

Holcim and Cemex have agreed a series of deals that will see both companies reorganise their European businesses. Holcim will take over Cemex assets in Western Germany in exchange for its operations in the Czech Republic and € 70 million (US\$ 93 million) in cash. The two companies will also combine their operations in Spain, with 25% owned by Holcim and 75% by Cemex.

In Western Germany, Holcim will take over one cement plant and two grinding mills of 2.5 million tonnes total capacity, along with one slag granulator, 22 aggregates quarries and 79 ready-mixed concrete plants.

Cemex, meanwhile, said it remained committed to the German market, and would maintain its presence in Northern, eastern and Southern parts of the country. Cemex will acquire all of Holcim's businesses in the Czech Republic, including one cement plant, four quarries and 17 ready-mixed plants.

In Spain, Cemex and Holcim will combine all their cement, ready-mix and aggregates operations with Cemex taking a 75% controlling interest.

AUSTRALIA

Murray & Roberts to acquire Clough

South African contractor Murray & Roberts has launched a cash offer to acquire the 38.4% of Australian contractor Clough that it does not already own.

The offer has been made at AU\$ 1.46 (US\$ 1.32) per share, for a total cost of AU\$ 434 million (US\$ 393 million). This values Clough at some AU\$ 1.13 billion (US\$ 1.02 billion).

Clough forecasts revenues of AU\$ 1.5 billion (US\$ 1.36 billion) for the year to June 30. Operating profits for the year are expected to be AU\$ 90 million (US\$ 81 million), and the company has an order backlog of AU\$ 2.32 billion (US\$ 2.1 billion). Murray & Roberts has held a stake in the energy & chemicals and minerals & mining company since 2003.

US

Outlook cut

Caterpillar has revised its outlook for 2013 after reporting a drop in revenues to US\$ 14.6 billion for the second quarter of 2013, down from US\$ 17.4 million a year ago. It blamed reduced dealer inventories and lower demand for mining equipment as net profit also slipped to US\$ 960 million, from US\$ 1.7 billion in Q2, 2012.

FRANCE

Revenues rise

Vinci saw its revenue for the first half of 2013 rise +4.3% to € 18.7 billion (US\$ 25 billion), but net profits slipped -4.7% to € 748 million (US\$ 996 million). The contractor said it was hit by a difficult economic environment and severe weather conditions across most of Europe, as well as tax measures imposed in France in the second half of last year.

DENMARK

Pihl bankruptcy

Contractor E Pihl & Søn has filed for bankruptcy. The company blamed its previous domestic and international expansion, which it was had been "far too aggressive," along with claims against it and other costs that had not been provided for.

Pihl was founded in 1887 and is one of Denmark's oldest contractors, with activities in 15 countries.

AUSTRALIA

Rail win

A consortium led by contractor Thiess has been awarded a AU\$ 650 million (US\$ 579 million) contract to build a 12.6 km rail link in south east Queensland, Australia. The Moreton Bay Rail Link will connect the greater Brisbane rail network, which currently ends at Petrie, a suburb north of the city, to the rapidly growing Moreton Bay region to the east. Six new stations will be built at Kippa-Ring, Rothwell, Mango Hill East, Mango Hill, Murrumba Downs and Kallangur.

Exchange rates: August 2013

VALUE OF 1:	SYMBOL	AUS	BRL	UK£	CNY	€	INR	YEN	MXN	RUR	SAR	ZAR	KRW	CHF	US\$
Australian Dollar	AUS\$		0.48	0.575	5.46	0.670	61.4	87	11.79	29.6	3.35	9.20	996	0.823	0.893
Brazilian Real	BRL	2.08		0.276	2.63	0.322	29.5	41.9	5.67	14.2	1.61	4.42	479	0.396	0.429
British Pound	UK£	1.74	3.62		9.5	1.16	106.8	152	20.5	51.6	5.82	16.0	1733	1.43	1.55
Chinese Yuan	CNY	0.183	0.381	0.105		0.123	11.24	15.9	2.16	5.42	0.613	1.683	182	0.151	0.163
Euro	€	1.49	3.11	0.86	8.16		91.7	130	17.6	44.3	5.00	13.73	1488	1.23	1.33
Indian Rupee	INR	0.016	0.034	0.009	0.089	0.011		1.4	0.192	0.483	0.0545	0.150	16.2	0.0134	0.0145
Japanese Yen	YEN	0.011	0.024	0.007	0.063	0.008	0.705		0.1352	0.340	0.0384	0.1055	11.4	0.0094	0.0102
Mexican Peso	MXN	0.085	0.177	0.049	0.464	0.057	5.21	7.39		2.52	0.284	0.780	85	0.070	0.0758
Russian Ruble	RUR	0.034	0.070	0.019	0.184	0.023	2.07	2.94	0.398		0.113	0.310	33.6	0.0278	0.0301
Saudi Riyal	SAR	0.299	0.621	0.172	1.632	0.200	18.347	26.027	3.520	8.853		2.75	298	0.246	0.267
South African Rand	ZAR	0.109	0.226	0.063	0.594	0.073	6.680	9.476	1.282	3.223	0.364		108	0.090	0.097
South Korean Won	KRW	0.0010	0.0021	0.0006	0.0055	0.0007	0.0616	0.0875	0.0118	0.0297	0.0034	0.0092		0.00083	0.0009
Swiss Franc	CHF	1.21	2.53	0.70	6.64	0.81	74.62	105.86	14.32	36.01	4.07	11.17	1210		1.085
US Dollar	US\$	1.12	2.33	0.644	6.12	0.75	68.8	97.6	13.2	33.2	3.75	10.3	1116	0.922	

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Rich media

Free tablet versions of *iC* and its sister publications *Construction Europe (CE)*, *American Cranes & Transport (ACT)* and *International Cranes and Specialized Transport (ICST)* feature a wealth of extra content, including videos, audio and image galleries.

Selected images that appear in the print magazines have extra rich media files imbedded behind them for the tablet editions. As you read through the tablet editions, watch out for 'play' buttons that indicate a video is imbedded, and arrows leading to extra image galleries which can be scrolled through.

Monthly podcasts from *iC* and *CE* are also imbedded in the tablet editions and can be listened to while reading the issue.

KHL's editorial teams are always on the look-out for new content, and would welcome images and videos from construction projects around the world for consideration in the tablet editions. To contact the editorial team, turn to the inside cover of any KHL publication or go to the magazine's homepage on www.khl.com.

The tablet editions can be downloaded via either the Apple or Android News Stand facilities or directly from the Pocketmags website – www.pocketmags.com – to these and other devices such as Kindle Fire and Blackberry Playbook, as well as on PCs and Macs. Just search pocketmags.com for either KHL or the title of the magazine you want to read.

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Global market outlook video

Visit the www.khl.com Video Zone for our latest presentation on the state of the global construction market.

The latest video in the www.khl.com Video Zone features *iC* editor Chris Sleight discussing the state of the global construction market. The presentation looks at economic conditions around the world as well as forecasts for the construction industry.

A global overview is followed by more detailed analysis of key regions including Europe, North America, Latin America, developing Asia and other emerging markets.

Although the current market outlook is strong – *iC* estimates global construction output will grow by around +4.5% this year, compared to GDP growth of just +3.3% – and next year should see further growth, there remain some areas of weakness. Construction output in Europe is still falling, and despite robust growth in other parts of the world, the industry is not likely to return to the boom conditions of the 2000's in the foreseeable future.

The video can be found in www.khl.com/videozone and like *iC*'s podcasts, is also available for free through the iTunes store.

Monthly podcast

Every issue of *iC* is accompanied by a podcast, which can be downloaded from iTunes for free. Alternatively you can listen to it on the Podcast page of www.khl.com. or click on the image below in the iPad edition of the magazine.

Each podcast sees *iC* editor Chris Sleight and deputy editor Helen Wright discuss key stories, including the news making the headlines at the front of the magazine to more in-depth discussions stemming from features.

Go to 'Podcasts' under the 'Audio & Video' tab of www.khl.com or scan the QR code to access the latest edition. The online archive at www.khl.com now stretches back more than two years.



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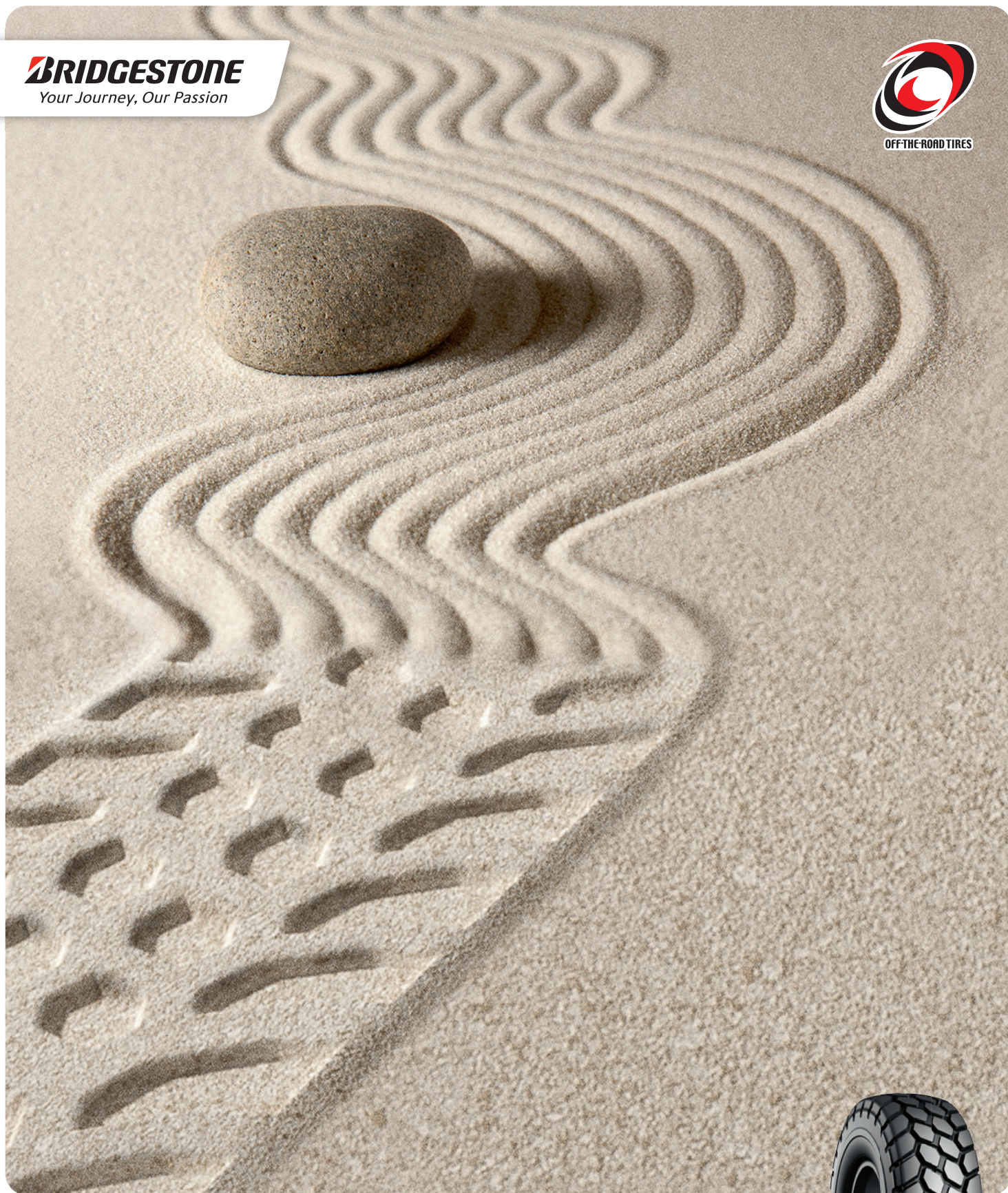
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The Shard –
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Speaker profile: Virginie Colaiuta

New international dispute resolution mechanism outlined



Virginie Colaiuta, a partner at law firm Pinsent Masons, will speak at this year's International Construction Economic Forum (ICEF) on a crucial legal issue for the global construction community.

Investment treaty arbitration is a new form of dispute resolution that can help contractors when they are experiencing business difficulties in a foreign country. It covers behaviour or omissions by the host country, and can be of help to a foreign contractor in cases

such as expropriation of profits or unfair treatment in comparison to a local company.

Crucially, the right to settle disputes through this mechanism exists outside of any contract that might be in place, as it is under-pinned by thousands of bilateral and multi-lateral legal treaties.

Ms Colaiuta joined Pinsent Masons as a partner in 2011, having previously practised law in France. She is a member of both the New York and Paris Bar. Pinsent Masons is one of the world's largest legal firms in the construction sphere. It counts more than half of the world's 100 largest contractors among its clients.

Five major construction schemes completed in the last 18 months have been shortlisted for the inaugural International Construction Project of the Year award. The winner of this prestigious prize will be announced at the International Construction Economic Forum (ICEF), which takes place from 20 to 22 November at the Hotel Okura in Amsterdam, the Netherlands.

The five shortlisted entries are: Cognizant Technology Park, India (entered by Larsen & Toubro), JW Marriott Marquis Hotel, Dubai (Brookfield Multiplex), Katupali Port, India (Larsen & Toubro), The Shard, UK (Mace Group) and Vidin-Calafat Bridge, Bulgaria/Romania (FCC). These five schemes met the entry criteria of having a contract value of more than US\$ 100 million, and reached completion between January 1, 2012 and June 30 this year.

ic

■ For more details of the short-listed projects, go to the awards section of:

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Back to growth

US construction is seeing a strong rebound, but the public sector remains a weak link.

Scott Hazelton reports.

The US economy has grown at less than +2% for the third consecutive quarter, and many of the factors that will shape the near term, such as the reduction of the Federal Reserve's bond purchases or the impact of the federal government sequester, are not easy to predict. Even so, fundamentals for solid growth are in place for 2014 and 2015 - both consumer and business spending have increased in spite of these conditions and will continue to do so.

Arguably, the most important event in recent months was the 10-year Treasury bond yield rising from 2.0% in late May to about 2.9% at the time of this writing. Near-term growth in the housing sector has been affected by higher mortgage rates as a result. However, a lean supply of housing, positive builders' sentiment, and continued rising prices should help the long-term recovery of the sector.

Perhaps the biggest near-term uncertainty for financial markets is when the Fed starts winding down its US\$ 85 billion per month asset-purchasing program (QE3). While Fed officials are eager to end bond buying, labour market data is mixed and inflation is still running below the Fed's +2% target.

A "tapering" is likely in December, but even so, the Fed will continue to purchase bonds for another couple of quarters and keep interest rates low at least until unemployment reaches 6.5%, probably in late 2015. As such, the impact on economic growth will probably be imperceptible.

The other policy uncertainty centres around federal government spending and the sequester.

While the impact of the sequester was far less than what was anticipated at the beginning of this year, the third-quarter of 2013 is also the end of the federal government's fiscal year, meaning that there are likely to be more cuts before September. Assuming that the sequester lasts through the end of the calendar year, that implies a drag on growth from government spending in the second half of 2013.

Housing sector

The impact of Fed tapering is being felt in the housing sector, and the recent 100-basis-point (1 percentage point) jump in mortgage rates will slow the recovery. Higher rates have already caused a sharp drop in the demand for mortgage credit.

Housing starts which had been rebounding in the early part of this year, now hover just under a 900,000-unit annual rate. But the recovery in home sales and construction will ultimately

continue since inventories are lean and demand for housing exceeds supply. Homebuilder sentiment remains high, and housing affordability is still historically favourable.

An analysis of the underlying demand for housing also suggests a resumption of this growth: new households forming (1.1 million units per year by IHS Global Insight's estimate), replacement demand (250,000 units/year), and second-home demand (50,000 units/year). Home prices will continue to rise faster than inflation until at least the end of 2014. While housing starts will number just under 1 million in 2013, the market will improve, supporting 1.2 million starts in 2014 and nearly 1.6 million units in 2015 and 2016.

Fixed investment has been another bright spot of late, with most gains coming from housing and equipment and intellectual property (a new category, largely software).

On the non-residential side, the construction market continues to suffer from excess inventory, weak demand and undisciplined fiscal policy. While the outlook is improved, employment and income growth are still lagging for this point in a recovery and it will still take some time for excess space to be absorbed.

Commercial construction

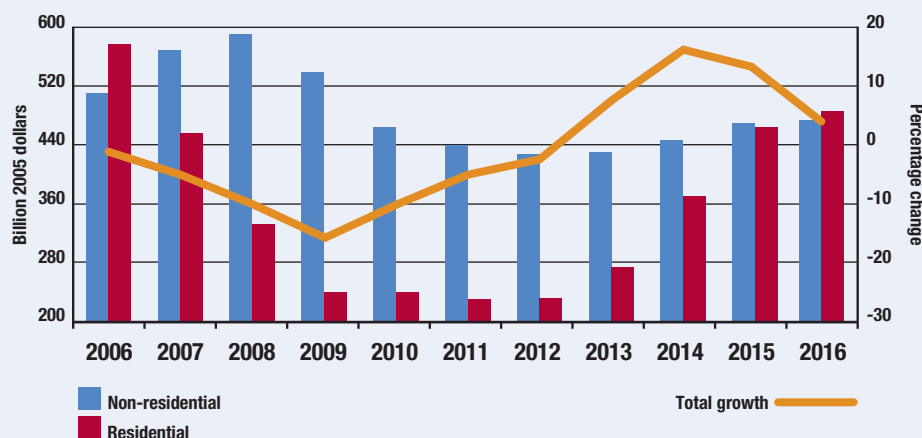
The outlook for commercial construction as a whole is positive, although it is expected to be muted over the next few quarters, as businesses remain cautious with long-term investment spending.

Spending growth has been more moderate in 2013 than in 2012 with expected growth of +6.9%. Commercial spending will get a boost in 2014 and 2015 as the residential sector continues to surge, falling back to a more normal pattern of growth afterwards.

Office construction growth has faltered as employment gains have been moderate, and focused on part-time workers as Obamacare costs discourage full-time employees. Growth in 2013 will be +8.7%, down from +12.8% in 2012. Even 2014 will see a slow start, with growth improving over the year. Even so, IHS Global Insight does not see a return to peak office construction spending until very late in the forecast.

Lodging construction will grow +15.7% in 2013, the best of all the commercial categories. Spending will still be about a third of the peak

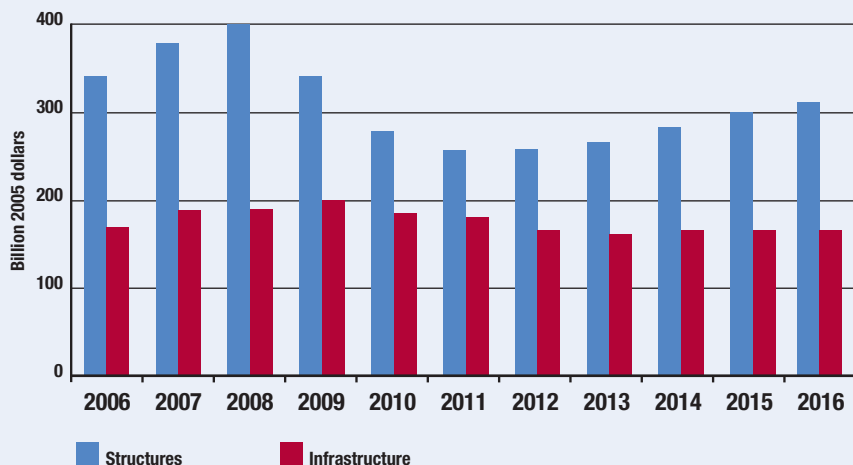
The trend for residential and non-residential construction



ECONOMIC OUTLOOK

Back to growth

Components of non-residential construction



Housing will lead to improved growth in street construction in 2014 and beyond, but the broad infrastructure sector will not see meaningful growth until 2015.

tight oil resources will lead to a resurgence of manufacturing construction activity by 2015, with a prolonged upturn as downstream manufacturing develops.

The weak link in the US construction forecast remains public spending. From health care to education to streets and highways, fiscal restraint is dictating postponement of investment.

IHS Global Insight

Recognised as the most consistently accurate forecasting company in the world, IHS Global Insight has over 3,800 clients in industry, finance, and government with revenues in excess of US\$ 80 million, 5,100 employees and 50 offices around the world in 30 countries. 80% of Fortune 500 companies are customers of IHS Global Insight.

■ For more information on matters discussed in this article or Global Insights' services, visit www.globalinsight.com or contact Scott Hazelton in the US on +1 781 301 9044 or at scott.hazelton@ihsglobalinsight.com



level in 2008 following a deep recession. There is a need to renovate existing facilities and rooms and even expansion in some markets. Spending will remain strong through 2014, as conditions continue to improve.

Retail had a decent 2012, but will struggle for even +1% gains in 2013. This sector continues to operate with excess capacity, and consumer confidence remains subdued. Housing, particularly home price increases, will help this segment thanks to the boost it will give to consumer confidence. Given rising home prices, healthy growth in retail construction should be seen in 2014 and beyond.

Construction in the manufacturing sector contracted early this year after a very strong 2012. Given the slow pace of global recovery, 2013 will be subdued. However, the prospect of readily available domestic feedstocks from the development of North American shale and

Water infrastructure

The only segment with appreciable growth in 2013 has been water related infrastructure, a reflection of the housing recovery, and possibly expansion of water treatment activity in the shale gas fields.

Housing will lead to improved growth in street construction in 2014 and beyond, but the broad infrastructure sector will not see meaningful growth until 2015, and even then it will be in the low single digits.

The US construction market is gaining momentum, but the pace of growth mirrors that of the broad economic recovery – slower than past economic upturns. However, the preponderance of evidence suggests that the recovery is real and sustainable, with improving prospects each year through 2015 and likely into 2016. **IC**

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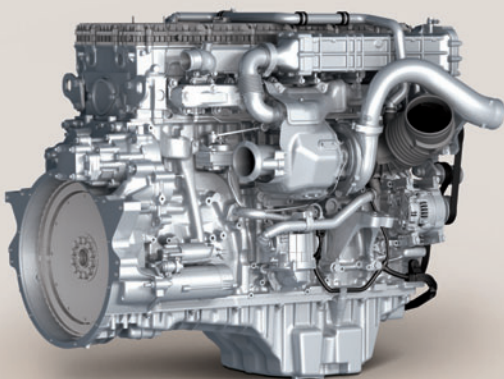
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A 12.86 m diameter Herrenknecht tunnel boring machine (TBM) has broken through on the construction of a new 1.2 km twin-tube harbour crossing in Miami after just 17 months to excavate both tunnels.



On the recovery trail

The North American construction market is continuing to grow, but a question mark still hangs over the future of publicly-funded work, particularly highways. **Chris Sleight** reports.

Topping out

New York tower reaches 541 m

May saw the topping-out of One World Trade Center in New York, US, with the placement of the final section of the 408 ft (124 m) spire set on top of the building that stands on the site of the Twin Towers. The pinnacle is mounted at a height of 1,250 ft (381 m) on the tower's observation deck, and takes its full height to 1,776 ft (541 m), making it the tallest building in the western hemisphere.

Placing the spire and its pedestal was carried out using the two diesel-powered 760 Favco tower cranes, which have been on site since the start of the project some seven years ago.

The first sections of the spire were delivered to site in March and were craned to the observation deck level by one of the 760s. The second tower crane was erected as a freestanding unit at the top of the 1,600 ft (488 m) building and at a height of 180 ft (55 m) itself, was able to erect the spire to its full height.



This year has seen the US construction market continue to recover. Data from the government's Census Bureau shows that for the 12 months to the end of June – the most recent set of figures available – construction output was up +3.3% to US\$ 856 billion for the rolling year.

Admittedly, data from earlier in 2013 painted a brighter picture. The January set of figures showed a +7.1% increase and it is fair to say that the slowdown in June caught many commentators by surprise.

However, the fact remains that the sector is back in a growth phase that began in the second half of 2011. At the low point during that year's summer, US construction output stood at around US\$ 770 billion for the rolling 12 month period, so in two years or so the market has bounced-back by some 11%.

It has been the private construction sector that has led the charge. The residential sector has shown particularly strong growth, but it also suffered the longest and deepest recession of any part of the industry, having started to turn-down as the sub-prime mortgage crisis started to bite in 2005 and 2006.

Elsewhere in the private sector, segments relating to power, office construction, amusement & recreation and lodging have performed well. However, the two largest segments of the market – construction of commercial property and structures for the manufacturing industry are flat or down slightly.



REGIONAL REPORT: NORTH AMERICA

On the recovery trail

But overall privately-funded construction in the US is growing at about +10% per year at present.

It is a different story in the public sector, which accounts for about a third of US construction output. Here budget cuts are seeing almost all sectors of the industry decline at a rate of about -9% per year. There are a few bright spots, most notably construction related to transportation and power, but otherwise it is a bleak picture, with most sectors seeing double-digit declines.

This includes the largest area of publicly-funded construction, the highway and street segment. In the 12 months to June this year the value of construction put in place was down -12.4% to US\$ 75 billion, from US\$ 86 billion a year ago.

Highway funding

The problem the sector faces is the lack of a stable long-term funding mechanism for road building and maintenance. Recent years have seen a series of short-term funding bills being enacted, often punctuated by a series of short-term emergency measures and extensions. For example, between the expiry of the 2005 – 2009 legislation and the signing of a new two-year bill in mid-2012 there were no less than nine temporary extensions to the first law to prevent road building and maintenance grinding to a halt.

The issue is not a partisan one. According to Caterpillar group president Stu Levenick, who is involved in lobbying congress on



Contractor Sherwood Construction bought a new G&Z S850QB concrete paver for the replacement of 460 m of Runway 18L-36R at Tulsa airport. The company said the machine helped it to complete the job in just 70 days.

this issue, both Republicans and Democrats agree on the need to put long-term funding in place. "If you would have asked that question a few years ago, it would have been very different," he said. The difficulty is how to put long-term funding in place.

Historically in the US, road building and mass transit systems have been paid for at a national level from the Highway Trust Fund. Revenues flow into this from a federal tax on road fuel – US\$ 0.184/gallon (US\$ 0.048/litre) for gasoline (petrol) and US\$ 0.244/gallon (US\$ 0.064/litre) for diesel. The Fund was established in 1956 and the current taxation levels were set in 1993 by the Clinton administration.

The reluctance to raise the fuel taxes in the last 20 years – even though they now represent only about 5% of road fuel costs – has seen the Fund suffer shortfalls since 2008, requiring injections of further revenues to keep it solvent. The Congressional Budget Office (CBO) estimates the shortfall will be US\$ 12.6 billion in the 2014 fiscal year and US\$ 14 billion in 2015.

And the long-term outlook for the Fund is not good. Legislation mandating greater fuel efficiency for vehicles is expected to see the Fund's receipts fall some -21% by 2040, according to the CBO.

Another concern is that even at current spending levels, the country's roads are deteriorating. Testimony by the CBO's assistant director for microeconomic studies, Joseph Kile, in 2011 said that current spending of about US\$ 160 billion per year on highways was some US\$ 14 billion less than was needed to maintain the nation's road network in its current state. He

Machine control

GSP guidance speeds up challenging site preparation

Site preparation for a new shopping complex in Owensboro, Kentucky, US took close to 90 days instead of the planned 45 to 60, due to persistent rain. According to Kevin Grant, project manager with Envision Contractors, the weather was so bad, that when clear skies appeared the company had to work fast to make the most of the opportunity.

The project involved adding cement stabiliser to the top 450 mm of the site, which was formerly a soybean farm and levelling a small hill that provided some 30,000 yd³ (23,000 m³) of material that was used elsewhere on the project. In addition to levelling the site for the structures, Envision constructed 247,000 ft² (23,000 m²) of parking and landscaping around the building, and a 600-foot (180 m) road extension leading to the facility.

In total, the company moved 85,000 yd³ (65,000 m³) of soil using two Caterpillar D6N LGP and one D5N LGP dozers. All three were equipped with Topcon 3D-Millimeter GPS+ machine control that combines laser and GPS capabilities. A Cat 120H grader equipped with a Topcon 3D GPS+ auto control system was also used on the project.

"The efficiency of the technology equipped machines is key to our ability to running productively and achieving exacting results in one pass. With this project – as with all of our projects today – there is no time for errors. Rework is too costly," said Mr Grant.

Asked how he would have handled the project differently without machine control Mr Grant said, "We'd be losing money on the project since we'd need two more employees on the site, another dozer, and all the survey time. It would take probably +30% longer without the technology."



REGIONAL REPORT: NORTH AMERICA

On the recovery trail



political climate, that doesn't look like it's moving forward."

In the broadest sense, there are only a few places funds could come from. One option would be some sort of tax increase, such as increasing fuel duty or taxes on new vehicle sales, while others could include raising funds from the private sector, through public-private partnership (PPP)-style concessions and franchises, or through the tolling of existing roads and other 'user pays' mechanisms.

But while the list of options in their basic form may be short, there does not seem to be the political will in Washington for a decision to be made on any of this.

It is an issue that has no quick solution. So while the US construction market is picking-up, many would argue the situation could be a good deal better. **IC**



Albert Marine Construction used an 80 tonne capacity Manitowoc 8500-1 for clean-up work in the wake of Hurricane Sandy. The crawler crane was used for piling work to rebuild the mile-long (1.6 km) Lavallette Boardwalk on the Jersey Shore.

added that a further US\$ 50 billion per year could be spent on projects whose benefits outweighed their costs.

Funding for roads has clearly fallen behind what is required over the last few decades and there would be a wider economic benefit in upping investment. However, a long-term solution is a long way off – not because of disagreements over the need to fund highways, but over how to fund them.

Al Cervero, vice president of the US-based Association of Equipment Manufacturers (AEM) said, "We had a stimulus package which was great, but it was a flash in the pan. The challenge is that the Highway Bill has no political will to move forward unless someone can come up with a funding method. There have already been something like 200 funding mechanisms put forward.

"We have been told that there is not going to be a Highway Bill unless it is coupled to numerous other bills – what is called the 'grand bill', and in the current



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HIGH RISE

The rise of the super skyscraper

The final section of a 124.4 m steel spire being lifted into position on the One World Trade Centre tower in New York, US, bringing the building to its full 541.3 m height and making it the tallest building in the country.



The rise of the super skyscraper

Stronger, faster and more light-weight equipment is increasing efficiency in the high-rise construction sector, allowing developers to reach for the skies. **Helen Wright** reports.



This year has seen the topping out of two 500 m+ tall high rise buildings – the first was the 541.3 m One World Trade Centre tower in New York, US, which became the tallest building in the country when the final section of a 124.4 m steel spire was lifted in to position in May.

Then the 632 m Shanghai Tower in the Chinese city's Lujiazui commercial district became the second tallest building in the world behind the 828 m Burj Khalifa in Dubai, UAE, when it topped out in August.

But as any watcher of skyscraper developments knows, these titles are never held for long. More super high-rise buildings are planned around the world, including the 1 km tall Kingdom Tower in Jeddah, Saudi Arabia. China is planning further 500 m+ developments, including the 838 m tall Sky City tower ➤

The Shanghai Tower is the new, 632 m tall icon in the Chinese city's Lujiazui commercial district. It was designed by architect Gensler and built by Shanghai Construction at a cost of US\$ 2.2 billion.

HIGH RISE

The rise of the super skyscraper

The One World Trade Centre tower with its iconic spire in New York, US.

in Changsha, Hunan province, as well as the 636 m Wuhan Greenland Center in Whuan.

Such immense structures present challenges for architects, contractors and construction equipment manufacturers alike. Take something as innocuous as the internal lifts, for example. Until recently, designers had to live with the fact that a building's elevators were limited to a maximum height of around 500 m due to the weight of the steel cable.

Alternative material

Manufacturer Kone has been working on this issue, and this year launched an alternative to steel rope, Ultra Rope, which has a carbon fibre core and a high-friction coating. Kone claims this can double elevator travel heights to up to 1,000 m by reducing rope weight and the overall elevator moving mass.

Indeed, Kone says Ultra Rope's lightweight carbon fibre core cuts elevator moving masses by up to -60% compared to steel – a fact that it says has opened up a world of possibilities in high-rise building. The lifetime of carbon fibre is also said to be at least twice that of conventional steel rope, and no lubrication is required to maintain it thanks to its coating.

As well as playing a significant part in the internal workings of a completed high-rise structure, hoists and winches have a key role during the construction process. Alexandre Chanteclair, tower crane product manager for Europe, Africa and the Middle East at Potain, said it was important to plan the length and



Minimum requirements

Call for Europe-wide tower crane training

The Committee of European Construction Equipment (CECE) is calling for Europe-wide minimum training requirements for people who operate and maintain tower cranes.

The organisation, which represents European construction equipment manufacturers, has been working with tower crane makers, which recommended harmonised European tower crane fitters' licenses and tower crane drivers' licenses.

"Our goal is to increase safety on construction sites – Europe-wide. This is why we need harmonised training of crane fitters and crane drivers", said Peter Schiefer, Wolffkran CEO and head of a section of CECE co-ordinating the interests of European tower crane manufacturers.

The level of training and skills required from construction companies currently differs throughout Europe. CECE said the minimum contents of tower crane operator training should include knowledge about national rules and regulations, general safety obligations,

crane operating techniques, accident prevention as well as practical exercises driving an operational sequence.

The request for harmonised licenses was sent to national ministries in European countries where some national requirements already exist. CECE said it hoped to open a structure dialogue about the issue as a first step, and reach agreement on common minimum requirements.

Peter Schiefer, Wolffkran CEO and head of a section of CECE co-ordinating the interests of European tower crane manufacturers.



strength of hoists and winches on high-rise projects.

"The tallest high-rise tower cranes need vast lengths of rope to carry loads to such great heights, and often work with two or more falls," Mr Chanteclair said. "A special study is carried out before erecting a crane beyond its maximum free standing height. Calculating the weight of hoist rope needed is an important part of this planning. Certain projects require drums with more than 1,000 m of winding capacity and we offer models with more than 1,100 m capacity.

"Another key aspect of working at height is the winch and its working speed. A weak winch can make for slow progress at a jobsite. And the strain placed on the winch can cause problems and delays," he explained.

Potain has introduced a new range of high performance winches, one of which (the 75 HPL 30) can reach speeds of ➤



Kone has launched an alternative to steel lift cable – Ultra Rope, which boasts a carbon fibre core that it claims can enable elevator travel heights of up to 1,000 m.



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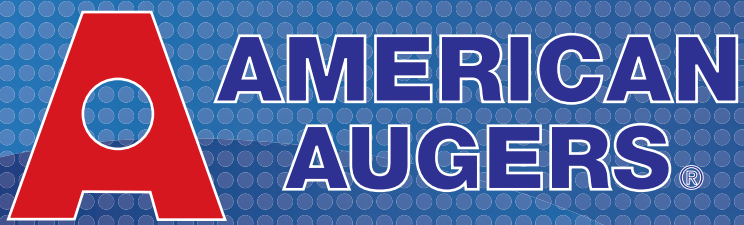
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Peri developed a crane-independent formwork concept for contractor CJSC Renaissance to support construction of the 249 m Evolution Tower in Moscow, Russia.

up to 225 m/min, making it the first to break the 200 m/min barrier, according to the company. The latest new winch to be introduced is the 270 LVF, a 200 kW-rated unit which can handle loads of up to 40 tonnes in four falls at a maximum speed of 162 m/min.

Collaboration

Keeping to tight schedules and avoiding potentially costly project overruns are key challenges on high-rise developments. Manufacturers are demonstrating that they are prepared to work closely with contractors to make sure the right tools for the job are on site at the right phase in construction.

The fabrication of concrete elements plays a central role in the



Rental growth in Hong Kong

New crane for high-rise projects



Demand for cranes in the rental market in Hong Kong, China, is booming, according to Manitowoc the owner of the Grove brand. It reports that there is a shortage of operators and rental rates are increasing by +10% every year.

Local rental company Kanson Crane & Heavy Transport bought a Grove GMK6300L all-terrain crane to help with tower crane assembly and high-rise construction jobs.

The new 300 tonne capacity model added to Kanson's 50-strong fleet and filled a gap in the company's portfolio, according to company founder Nelson Kan.

"The Grove GMK6300L has a long boom perfect for tower crane erection. We also have considerable work to do on high-rise structures as well as replacement of old buildings in Hong Kong. The 6300L will be the ideal solution for all these applications."

The crane has a seven-section, 80 m boom is the longest in its class, designed for challenging lifts without the need to rig the jib.

construction of most skyscrapers, and formwork companies are constantly working to improve the efficiency with which the core and floor slabs of a building can be put in place.

Peri, for instance, is working with contractor CJSC Renaissance Construction to ensure that the Evolution Tower, a new high-rise landmark in Moscow, Russia, gains 4.3 m in height each week during the peak of construction.

The tower will be 249 m when complete in 2014, and form an iconic part of Moscow City – a new business district. Each floor of the tower twists 3° in relation to the preceding one, arranged around the central core of the building, making the entire structure twist clockwise from its base by more than 150°.

Peri engineers developed a crane-independent formwork system on the basis of its RCS and ACS self-climbing ranges. The ACS system was used with Peri's Vario GT 24 wall formwork for the building core, while customised Uniportal slab tables were used to form the floor slabs and a diagonally climbed RCS climbing protection panel and landing platform accompanied every phase.

Core walls and floor slabs were concreted in one pour, with each floor divided into three concreting sections. Peri said the special feature of its solution for the Evolution Tower was the combined climbing formwork for the vertical core walls and



Potain's latest winch is the 270 LVF, a 200 kW machine that can handle loads of up to 40 tonnes in four falls at a maximum speed of 162 m/min.

HIGH RISE

The rise of the super skyscraper

Construction of the 1 km tall Kingdom Tower in Saudi Arabia began in March this year and is due to be completed in 2018.

twisted corner supports, together with the diagonal protection panels and landing platforms.

This bespoke approach has allowed the slab and column formwork to progress quickly and smoothly up the tower, and is helping the project stay on-track for completion, according to the company.

Doka is also working on high rise projects around the world, and is supporting contractor Tidhar Construction on the Shahar Tower in Tel Aviv – a 200 m building that will become one of the tallest in Israel once complete in 2016.

Most of the foundation castings for the project had to be completed during the night as the construction site is located



The Wuhan Greenland Center is a 636 m tall, 125-storey skyscraper currently under construction in Wuhan, China, designed by architects Adrian Smith + Gordon Gill.



at the centre of Givattayim City, a major intersection at the heart of metropolitan Tel Aviv. Doka said around 3,500 m³ of concrete were supplied to the site in the space of twelve hours.

Once the foundations are complete, climbing formwork from Doka including SKE50 automatic, Top 590 large-area, MF240 and Frami Xlife will be used to cast sections of the tower. The manufacturer's Xclimb 60 self-climbing protection screen will also be used to help ensure a safe working environment on higher levels of the building.

Indeed, safety is another crucial aspect for contractors to >



To protect workers from falling debris, Combisafe's safety meshes and fans were used across Saudi Arabia's US\$ 8 billion King Abdullah Financial District, where 40 multi-storey towers are planned.



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HIGH RISE

The rise of the super skyscraper

consider on high-rise developments, not only for workers at the top of the building, but for anyone on the ground below. Many high-rise developments are, by their very nature, being constructed in urban areas, and this is certainly true of Saudi Arabia's US\$ 8 billion King Abdullah Financial District, where 40 multi-storey towers are currently under construction across a 1.6 km² site.

Scheduled for completion in 2016, the development will host banks, financial institutions and professional service companies. But construction is presenting a logistical challenge, with almost complete multi-storey buildings under construction next to foundations where piling work has yet to begin, according to manufacturer Combisafe.

A total of 1,450 steel mesh barriers and multi mesh barriers have been supplied by Combisafe across the King Abdullah Financial District. With so many people at work across clusters of buildings, Combisafe said edge protection and fall safety systems were vital to ensure optimum safety at all times.

Offering a projection of 3.3 m, these safety nets are designed to absorb falls from heights of up to 6 m. In addition, Combisafe supplied 18 Preston Superdeck platforms, which provide access for heavy building materials to be delivered by crane to high-rise buildings. The platforms extend 4.5 m out from the side of a building and can carry up to 5 tonnes.

As work on any high-rise development progresses, contractors will face new sets of challenges. These include how to remove the equipment that has been climbing with the building as construction nears completion.

Contractor Larsen & Toubro (L&T) used a Liebherr 200 DR 5/10 Litronic

Alsina's Mecanoflex formwork was chosen for the installation of the basement area slab for the 26-storey Begonias Tower in Lima, Peru. Constructora AESA is building the tower for developer Cúbrica Gestora Inmobiliaria, scheduled for completion this year.



Contractor Larsen & Toubro used a Liebherr 200 DR 5/10 Litronic Derrick crane to dismantle a tower crane on the 220 m Kohinoor Tower in Mumbai, India.

Derrick crane to dismantle a tower crane that had been used to help construct the country's tallest commercial building – the 220 m Kohinoor Tower in Mumbai, India, which topped out this year.

According to Liebherr, towers above 200 m tall are becoming more and more common in India. The 200 DR 5/10 can dismantle cranes weighing over 300 tonnes, and can lower heavy parts from great heights while preserving a safe gap between the part and the building.

Removal

Once the Kohinoor's tower crane had been dismantled and lowered to the ground, the derrick crane was stripped down in to its individual parts and lowered into the buildings lift shafts.

The maximum dimensions of the individual components are 2.2 by 1.1 m by 1.1 m, and the maximum weight of any one component is 1,000 kg.

David Griffin, sales director at Liebherr-Werk Biberach, said, "We see huge potential for the execution of several dismantling projects using the Liebherr derrick crane on L&T sites. In fact, there would appear to be enough work for additional derrick units in India."

Nearly 600 buildings of 200 m or more are currently under construction or planned to be built around the world over the next few years, according to the Council on Tall Buildings and Urban Habitat. And plans are already in place for 20 more 500+ m towers to be built in the future.

With new records being broken in the high-rise sector every few years, it will certainly be interesting to see how manufacturers continue to experiment with very strong, but light-weight materials like carbon fibre in the coming years. **IC**



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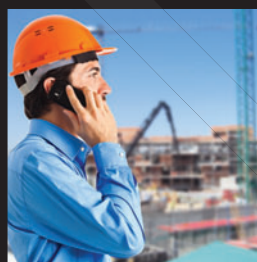
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Caterpillar's 986H has been designed specifically for lesser regulated markets and the company does not make an equivalent for Europe and North America.

Common goals

Variations in engine regulations mean wheeled loaders sold in different parts of the world have become very different animals. However, the drive for better fuel efficiency and productivity is a common theme. **Chris Sleight** reports.

Wheeled loaders built for the European Union, Japanese or US markets now feature engines with very low emission levels. And laws are due to get tighter. The current Stage IIIB, Tier 4 and Tier 4 Interim legislation (respectively for each territory) will be replaced next year with even tighter requirements.

These will see exhaust gasses having about the same level of pollutants in them as the ambient air in many cities. In fact, some manufacturers say that when Tier 4 Final and its equivalents are in place, their machines will act as air cleaners in some places.

Many parts of the world have similar but less stringent regulations to cover wheeled loaders and other types of construction equipment. They include developed countries like Australia and South Korea as well as major emerging markets like Brazil, China, India, Russia and Turkey.

Elsewhere in the world, including other parts of Latin America, Eastern Europe, Africa, the Middle East, South-East Asia and the CIS excluding Russia, regulations lag further behind or there are no laws at all to restrict pollution from off-highway equipment.

This is a headache for wheeled loader manufacturers, who, in an ideal world, would make one base machine with the same engine in it to cover all global markets. Instead they need at least two parallel lines – one for highly regulated countries and one for lesser regulated ones. Some even say there is a case for three ranges – highly regulated, lower regulation and zero regulation markets.

There are several reasons for this. The first is that machines built for Europe, Japan or the US have a lot of expensive technology on-board to cut emissions. It is doubtful such a price premium would be accepted in countries where it was not legally required. ➤

Komatsu's Stage IIIB wheeled loaders come with the free Komatsu Care service programme, covering the first two years or 2,000 hours.



WHEELED LOADERS

Common goals



At 4 m³ bucket capacity, the 467 is the largest wheeled loader JCB has ever built. It is initially being launched in lesser regulated markets, where the company sees the greatest growth potential for this class of machine.

Doosan's product manager for wheeled loaders in Europe.

"In the EU and US, Doosan is now offering new Tier 4 Interim or Stage IIIB machines from the new generation Dash 3 (DL-3) range running from the new DL200-3 model to the largest, the new DL550-3 wheel loader. For emerging markets, we offer two parallel lines of products – the new, mainly Tier 2 DLA range and the Chinese WLO DISD range based mainly on Tier 1 engines.

"Apart from Stage IIIB and Tier 4 Interim engine technology, the DL-3 machines are equipped with 5-gear transmissions and lock-up torque converter, load sensing hydraulics, supreme radiator technology and have many special standard features included, which are just options for other suppliers such

as auto lube, cyclone separator, two-way suspended seat, heated mirrors, reversible fan, load

isolation and many more. The DLA range is powered by Doosan Tier 1 and Tier 2 engines, which are not electronically controlled, to meet simplified servicing requirements in emerging markets," he said.

"These are strong machines with outstanding torque at low revs and

high class components (ZF, Parker, Kayaba, etc.). Furthermore these machines are designed to run in both tropical and high ambient temperature applications with optional axle cooling, special air breathers or radiator geometry.

"To meet market demand for very economical machines in emerging markets, Doosan is offering (as the competition does) low cost alternative wheel loaders made in China, the DISD range. The two models, designed for the Chinese market are also available as export versions with a ZF transmission, a Tier 1 Doosan engine and modifications for applications in tropical climates," he said.

This is the same broad approach that many manufacturers are taking. Wheeled loaders for emerging markets may not have the same levels of technology on-board as those for Europe, Japan or the US, but they still have to be durable machines – perhaps more so than their developed market counterparts – and they often need to cope with much more extreme ambient temperatures and harsher work environments.

Caterpillar's new machines for lesser regulated countries are the ➤

Liebherr used Bauma to exhibit a prototype X-Power version of its 32 tonne L 586 wheeled loader, incorporating both a mechanical and hydrostatic drive, for better efficiency and performance throughout the full cycle.

Arguably more significant though is the issue of fuel quality. In order to run correctly, the current crop of Tier 4 Interim or equivalent wheeled loaders need ultra low sulphur diesel (ULSD), meaning around 15 parts per million (ppm) of sulphur.

Higher levels of sulphur would lead to greater amounts of particulate matter (PM) being produced, which would block systems such as diesel particulate filters (DPFs) and selective catalytic reduction (SCR) in machines' exhausts. This in turn would make engines overheat, break down and suffer permanent damage.

Such fuels tend not to be available to the off-highway sector outside Europe, Japan and North America, so it would be catastrophic for machine owners if loaders requiring ULSD were sold in these regions.

Regional differences

These global variances in engine regulations have forced manufacturers to develop and produce at least two different ranges of wheeled loaders. Although this is not what they would want in an ideal world, it is good news for machine buyers who are seeing loaders coming onto the market that are better suited to their requirements, rather than a 'one size fits all' approach.

Some of these differences were outlined by Marc Glesius,



SDLG's new LG953N weighs in at 16.6 tonnes and offers better fuel efficiency and durability than its predecessor.

Hitachi has delivered its first ZW220-5 wheel loader in Europe to Norwegian company Farbu & Gausen's limestone quarry in the Trondheimsfjord on the Inderøy peninsula. The company said it chose the machine for its loading capacity, stability, operator comfort and low running costs.



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WHEELED LOADERS

Common goals

UK aggregates company Holme Sand & Ballast LLP says it has increased productivity +10% since purchasing two new L26206E wheeled loaders from Bell Equipment. The machines are built in the US by John Deere and sold in the UK under the Bell brand.

said Mr Lefèvre – belies some clever design features.

These include a cut-out areas in parts of the boom where steel is not required

for structural strength, which Mr Lefèvre said removed 500 kg from the front-end linkage. This saving is something that can be translated into more material in the bucket and less dead weight being carried around.

The loader is designed to match 36 to 55 tonne haulers such as the Cat 770, 772 and 773 rigid haulers. Mr Lefèvre said it could load the smallest of these in four passes and the largest in five to six, but for this would need a high lift front-end to add 500 mm to the dump height.

The new 988K for highly regulated markets meanwhile weighs in at 52 tonnes and is designed to work with Cat's 64 tonne capacity 775 rigid haulers. The company says its fuel consumption is the best in class, some -20% lower than its predecessor, the 988H. This has been achieved with a new Eco mode and tuning the hydraulic system to give its maximum flow at 1,400 rpm on the engine, rather than 1,800 rpm as was the case previously.

In a similar vein, one of JCB's latest loaders, the 467 has been ➤

986H and 988H. The 986H is an interesting one because there is not an equivalent model available in developed countries, while the 988H has its counterpart, the 988K for these territories.

Caterpillar spokesman Olivier Lefèvre said the 986H with its 42 tonne operating weight was designed to fill a gap between the 31 tonne 980 and 51 tonne 988 models, although it shares some key components such as the front axle and brakes with the 988.

"There is a simple operator interface, simple technology with less electronics, but high productivity and durability," said Mr Lefèvre.

But simple technology for owners and operators – such as a Z-bar linkage and simple steering wheel control, rather than joysticks – "In lesser regulated countries people prefer a wheel,"

Business developments

Corporate changes among manufacturers

Two events this year will have an impact on the make and models of wheeled loaders available in some parts of the world.

Atlas-Terex

Atlas Maschinen has acquired Terex's range of five wheeled loaders, ranging in size from 1.5 m³ to 3 m³ bucket capacity. Terex ceased production of the machines in April due to the difficult economic climate and increased competition.

Atlas said it would produce the machines under both the Terex and its Kaelble/Atlas brand. Production is set to start in the final quarter of the year at the Atlas factory in Ganderkesee, Germany.

Atlas owner and chairman Fil Filipov, a former Terex executive, said the L160, L210, L260, L310 models, as they will be known, complemented the Kaelble/Atlas brand's existing L420 and L450 models. Atlas was also previously owned by Terex, and Mr Filipov acquired the business in 2010 from his former employer.

"I am happy that Atlas Maschinen will finally enter this important market with known products and the well-known Kaelble brand. Combining the Kaelble large loaders will give the distribution a respectable heavy wheeled loader line," Mr Filipov said.

SDLG in North America

Volvo CE's Chinese joint venture, Shandong Lingong Construction Machinery (SDLG), is to introduce "competitively priced" wheeled loaders to the North American market.

Two models – the Tier 4-compliant, 1.8 m³ bucket capacity LG938L and the Tier 3-compliant, 3.1 m³ bucket capacity LG959 – will be introduced to selected dealers before being rolled out to a wider customer base across the region in the coming months.

SDLG's director in North America, Al Quinn, said, "The availability of SDLG machines in North America will provide customers with a new alternative when it comes to purchasing their next wheeled loader.

"We believe that the SDLG value promise of high reliability in a value-priced product will be appealing to many customers, especially those who would otherwise look at purchasing a used machine. The brand's arrival in North America is great news for customers who want cost-effective machines that are durable and high quality."



Leica has launched a 3D machine control system for wheeled loaders in its Icon instrument range. The system gives operators real-time cut & fill information on an in-cab monitor, helping to get tasks done with the minimum of passes and eliminating grade checking.

WHEELED LOADERS

Common goals

The HL757-9A is Hyundai's new 2.7 m³ bucket capacity loader, fitted with 149 kW Stage IIIB engine. Changes from the previous model include an improved cab, up-graded monitor and increased glazed area.

designed for lesser regulated markets, and the company says its structures should last 20,000 hours or more.

Weighing in at nearly 24 tonnes, and fitted with a 4 m³ bucket as standard, it is the largest wheeled loader the company has ever built. JCB says the pre-launch evaluation programme saw prototypes log-up thousands of hours of testing with customers, in temperatures ranging from -20°C to +50°C.

JCB's chief innovation and growth officer, Tim Burnhope, said, "JCB has made a substantial investment in developing the JCB 467 to ensure it provides the durability, reliability, efficiency and productivity customers for this machine demand."

"The JCB 467 has been designed from the ground up and will deliver all these attributes with the lowest possible operating costs. The 467 will initially be offered in non-emission legislated markets where we see the biggest growth potential for this size."

The company says the optional five-speed Driveline Efficiency Package can offer fuel savings of up to -20% and productivity



Quarry operator Trezence TP has taken delivery of the first CASE 1121F wheeled loader sold in France. It estimates that the machine burns 12 litres of diesel per 1,000 tonnes of material moved less than a competitor model, equating to savings of € 100,000 (US\$ 130,000) per year.

gains of up to +40% compared to the standard four-speed model, while it added that benchmark tests showed the 467 to be up to +25% more productive than the nearest competitive model.

Power comes from a 290 hp (216 kW) 10.8 litre Cummins engine, driving a ZF transmission and axles.

Further down the scale meanwhile the 411 and 417 are its latest loaders for regulated markets, with 68 kW and 93 kW Stage IIIB engines.

These machines use both JCB's own axles and engines, with only the transmission coming from ZF. JCB said a great advantage of this was that it had achieved Stage IIIB compliance on its own engines without the use of any exhaust aftertreatment, such as a DPF. Without this extra bulk, the machines could be kept compact and servicing and operating costs minimised for the machines' owners.

Joint venture brand

Another key launch for lesser regulated markets has come this year from SDLG, Volvo's Chinese joint venture. The LG953N was, like the JCB 467, launched at June's CTT exhibition in Moscow, Russia.

The selling point of the 16.6 tonne LG953N is its low-speed powertrain, which offers better efficiency and lower fuel consumption than its predecessor. At the same time, performance and durability have been improved with new features like a reinforced drive axle. The redesigned cab offers better visibility, while air conditioning, vibration damping, a digital instrument panel and all-round seals make it a comfortable environment.

Komatsu's latest models, both launched at April's Bauma exhibition, are the 18 tonne WA-380-7 and 33 tonne WA500-7, ➤



ABOVE: The DL550 is one of Doosan's new wheeled loaders for lesser regulated markets. The 5.4 m³ bucket capacity machine features a Tier 2 294 kW Scania engine and can be used in three working modes – Eco, Normal and Power.



Doosan's newest loaders for highly regulated markets, such as the DL200-3, feature a new instrument panel with integrated vehicle control unit panel. Fuel saving features include an auto-idle function that cuts engine revs to 200 rpm after 10 seconds of machine inactivity.



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WHEELED LOADERS

Common goals

Deere's latest loaders are in the compact classes. The 204K (44 kW) and 304K (48 kW) are just 8 ft (2.44 m) tall, with a low centre of gravity for increased stability and tipping load limit.

which have rated engine powers of 143 kW and 263 kW respectively. The WA380-7 would tend to be fitted with a bucket around 3.2 m³ capacity, while the WA500-7 is up in the 5.5 m³ class.

Both are for highly regulated markets, with their Tier 4 Interim/Stage IIIB engines, and are supported by Komatsu Care, a complementary maintenance programme for all Komatsu machines with this type of engine that covers the first three years of 2,000 hours, incorporating work by Komatsu-trained technicians using genuine parts.

Also included are two complementary exchanges of the DPF and a warranty on the first DPF for five years of 9,000 hours.

The Komtrax telematics system is standard, and this uses a secure website to feedback key information such as operating hours, fuel consumption, location, cautions and maintenance



Clean-up king

Volvo loader is remediation workhorse

Bodenrecycling Allgäu (BORAG) GmbH, near Munich, Germany was the first soil bioremediation plant in south Germany.

"Our aim is to protect the environment in a sustainable way to ensure it's safe for future generations," said Hubert Schmid, chief executive of parent company Hubert Schmid GmbH. "This is at the heart of everything we do in the energy, recycling and civil engineering sectors – and this is consistent in the machinery we use. Volvo Construction Equipment machines boast low fuel consumption and efficiency – caring for the environment just as we do."

BORAG carries out ex-situ bioremediation, excavating contaminated soil and transporting it to the treatment facility. The company's bioremediation technology – using microorganisms to remove pollutants – sees the soil mixed with biological material using a Volvo L180F loader.

Machine maintenance manager Reinhard Mayer said, "We move 80,000 tonnes of biological material and 40,000 tonnes of stone each year, so having a reliable machine and durable bucket to get the job done is very important."

Purchased two years ago, the loader has already run-up 3,440 hours. One of the site operators, Bolkart Luggi, said, "I spend up to 10 hours per day operating the L180F wheel loader, and the comfort of the cab is far superior to anything I've operated before. The controls are simple and the climate control ensures I'm never too hot or too cold. But the best thing is the visibility – I can see all around me with ease."



alerts to machine owners. It also now features details about the type of work the machine is doing, engine performance and the status of the DPF.

High capacity lock-up torque converters are standard and these are said to improve hill climbing and acceleration, while delivering a higher top speed and lower fuel consumption.

Operators meanwhile will appreciate the quiet cab environment and short lever pilot controls. New on these models is a 7 in (178 mm) high resolution screen supporting 25 languages, where settings for items such as auto idle shutdown or the auto-reversing fan can be changed.

In addition to several new models launched at Bauma, Liebherr took the wraps off a prototype version of its 32 tonne L 586 loader, the X-Power version, which uses a continuously variable power-split transmission combining mechanical and hydrostatic drivelines.

When travelling at slow speeds, the loader is driven mainly through the hydrostatic transmission, which is more efficient in this range, but as speed picks up, the influence of the mechanical drive increases. Liebherr says that this twin approach reduces transmission losses across the board and leads to a higher performance in every part of the working cycle.

Efficiency drive

Whether new loaders are destined for highly or lesser-regulated markets, the common theme remains improving fuel efficiency and performance. Different manufacturers are taking different approaches to this, be it cutting unnecessary weight, offering more sophisticated driveline packages or designing their machines around lower engine revs. **ic**



Several Chinese manufacturers now offer wheeled loaders powered by liquefied natural gas (LNG), which is said to be cheaper and less polluting than diesel. Pictured is XCMG's LW500K-LNG, a 3.0 m³ bucket capacity machine.

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IRock's new WJC-2644 wheeled jaw crusher features high capacity, high discharge conveyor belts.



Choices, choices

The trend towards mobile equipment in the crushing and screening sector continues apace, with new machines and success stories coming in from around the world. However, there is still a place for traditional static plants. **Chris Sleight** reports.

There has long been a trend in the crushing and screening sector towards mobile equipment. With the fast set-up and tear-down times possible with modern equipment, and improvements made in transportability, there is great flexibility to be gained from machines that can be used in multiple locations, and which are easy to move around sites to where they are needed.

And after decades of refinement in the design of such machines, they have become well-honed to the needs of the sector.

The latest crushers from Kleemann, for example, are the 300 tonnes per hour Mobicat MC 110 Z and MC 110 R, which have been redesigned from scratch to incorporate a series of new features. These include hopper walls integrated into the chassis and a fully hydraulic crushing gap adjustment, which combine with previous features such as the independent double-deck pre-screen.

Like the company's Mobirex EVO series, drive variants with direct drive crushers and electric drives for the vibrating conveyors, belts and the pre screen, are now used for the mobile

jaw crushers. This helps with efficiency and even loading of the crusher chamber, as does the Continuous Feed System (CFS), which is used to adjust feed conveyor speeds to keep the crushing chamber loaded to the optimum level.

The heart of the machine is the articulated crusher jaw, which on the one hand prevents blocking of coarse material and on the other hand takes all fastening elements of the crusher jaw from the wear area. In addition, the transfer from the pre screen or the feeder trough is designed so that the material can simply tilt into the crushing jaw and convey an even material flow.

IRock's latest machine is the 2644 wheeled jaw crusher (WJC-2644), which can produce up to 350 tons per hour (318 tonnes per hour). The primary unit features a 36 ft (11 m) long, 48 in (1.22 m) wide discharge belt which offers a stockpiling height of 11 ft (3.35 m) – said to be the highest available in the industry for this class of machine.

The crushing chamber features hydraulic adjustment, from a minimum of 2 in (50 mm) on the closed side to a maximum of 6 in (150 mm) on the open side.

Other features include a 24 in (610 mm) wide grizzly bypass conveyor with an adjustable flop gate, as well as a 40 in (1.02 m) by 14 ft (4.27 m) feeder with a 5 ft (1.52 m) grizzly bar section. These features ensure that material is properly classified and directed to either the side discharge conveyor or the crusher discharge conveyor.

New from Terex Finlay is the 684 mobile screen, comprising two 4.3 m x 1.7 m inclined decks. The screenbox features quick wedge tensioning, access holes and a bottom deck hydraulic tensioning system to reduce the time required for mesh changes. ➤

CRUSHING AND SCREENING

Choices, choices

All three discharge conveyors fold hydraulically for transport which makes for quick set-up and tear-down times. In fact Terex Finlay says this self-contained plant can be ready for transportation in less than 30 minutes.

A 1050 mm wide variable speed belt feeder, with hydraulic gearbox drive, is standard and the hopper has a capacity of 8 m³ capacity. It can be fitted with either a 14 ft (4.27 m) tipping grid or 12 ft (3.66 m) vibrating grid.

But there is also still a strong market for fixed crushers and stand-alone components for crushing and screening plants.

Shanbao, which is part-owned by Sandvik, has unveiled



Kleemann's latest mobile crushers are the 300 tonnes per hour Mobicat MC 110 Z and MC 110 R mobile jaw units.



Terex Finlay's new 684 mobile screen features two 4.3 m x 17 m inclined decks.

Indian hub

Terex factory now supplying Eastern hemisphere countries

Terex Minerals Processing Systems has started to design and manufacture wheeled mobile crushers at its Hosur, India plant for distribution to Africa, Asia, Eastern Europe and the Middle East, as well as India.

Jaideep Shekhar, executive director of materials processing India said, "The wheeled plants have been designed and manufactured at our Hosur facility for nearly two years now but we are excited at the opportunity that this range has now been expanded and we have the ability to export globally."

The range comprises the WJ1175 jaw, WC1000 and WC1300 cone and WV2000 vertical shaft impact (VSI) crushers with high-stroke vibrating grizzly feeders and inclined screens. They are all-electric machines that can be used in a range of primary, secondary, tertiary and quaternary crushing applications.

The cone and VSI crushers feature a four-deck screen, allowing them to produce four sizes of product. The jaw crusher meanwhile features hydraulic closed side setting (CSS), while a standard feature of the cone crusher is Terex's System 2-PLC programmable electronic control system.

All four of the models made in India feature removable wheel bogies for transportation.

three new crusher units in the last 12 months. The company says it built them specifically for the Chinese market, with a simple yet robust and versatile design.

The high capacity DY single cylinder hydraulic cone series, for example, offers more performance and less weight than the previous PYYX range. It has a wide range of discharge sizes, and Shanbao says it is easy to maintain.

The PV jaw crusher series meanwhile can handle materials with a compressive strength up to 320 MPa and feed sizes up to 600 mm. Key features include a new chamber design to deliver better crushing performance, a fully-welded frame for rigidity and reduced weight, simple

mechanical adjustment of the discharge opening and a motor mounted directly to the frame.

Also new is the VI range of vertical shaft impact crushers, which are designed for shaping and sand manufacturing applications. The company says the range offers a large crushing ratio and production volumes, while at the same time being flexible enough to be used in different applications.

W.S. Tyler has launched a 4 ft (1.22 m) wide version of its F-Class vibrating screen. Due to its consistent G-Force, the F-Class is said to reduce blinding and pegging, even when screening sticky material, and is now available in widths from 4 ft (1.22 m) to 10 ft (3.05 m).

The F-Class features a shaft with two eccentrics, which the company says handles material volume spikes without losing momentum. As the eccentric shaft turns, the screen body follows the shaft movement. Counterweights on each screen reduce the amount of vibration transferred to the supporting structure, meaning multiple screens can be placed side by side with minimum investment in heavy structures. The design also keeps noise to a minimum.

The continual circular screening action produces a constant ➤



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CRUSHING AND SCREENING

Choices, choices

force which maximises screening efficiency and allows the equipment to be effective in both wet and dry applications.

Designed for operations that require a smaller footprint and capacity, the 4-foot F-Class can process up to 300 tons (272 tonnes) per hour while providing accurate sizing. It can screen any material from 3 in (76 mm) down.

Green field plant

Indeed, when it comes to high output facilities, many mobile units would struggle to keep up with the throughputs achieved by static units.

This is illustrated by Metso, which has won the contract to supply a complete crushing & screening plant to a green field quarry being opened by road building contractor Colas in France. The order includes primary, secondary and tertiary stages along with service contracts and extended guarantees.

Metso Mining and construction sales director for France,



Crusher considerations

CEMCO president Neil Hise explains how to choose the right VSI



Understanding the technology in today's vertical shaft impact crusher (VSI) designs and how it affects costs and profits is a key element to finding the right machine for your operation. VSI crushers can come in one of four configurations - closed rotor & anvil ring, shoe table rotor & anvil ring, closed rotor & rock shelf and shoe table rotor & rock shelf.

The open shoe table will work best for softer materials or for processing less abrasive materials with a larger feed size

- normally 3 inches (76 mm) or larger. Highly abrasive materials would wear the shoes too quickly - maybe just six hours before they needed replacing. This is of course costly in terms of both new parts and down time.

When working with the shoes, it is important to either replace them as a complete set or in pairs to maintain proper balance on the rotor. The shape of the shoe can impact the production sizes - straight shoes produce more fines, while curved shoes produce coarser material.

For more abrasive materials, closed rotor designs tend to be most effective. But perhaps the single most important decision is whether to opt for a rock shelf or anvil ring design.

With a rock shelf, material builds up in an open ring, to form a shelf of the mineral being crushed. This is designed to protect the ring from abrasion and provides a wall at which material is hurled at high speeds and with great force to fracture it.

Although this sounds like a good alternative to the cost and expense needed to replace anvils as they wear, things are not quite that simple. When the material thrown by the rotor hits the shelf, it absorbs energy that could otherwise be used for breaking - a reduction in efficiency. As well as lower production, this implies that more force, meaning more rotor speed and therefore a larger motor, is needed to break the material, increasing purchase and operational costs.

Anvil rings meanwhile use a series stationary blocks that rock is thrown against by the rotor - a design that means much more energy goes into crushing the material. Maintenance costs might be higher, but these can be helped with the systems offered by some manufacturers that allow anvils to be rotated, meaning the full face is used before they need replacing.

Distance can be easily altered by either adjusting the rotor diameter or the number of anvils in the system - the closer the throw distance, the more fines will be produced. Impact energy can also be adjusted by changing the rotation speed - higher speeds mean more fines - and with the variable frequency drives available today, this can be a simple change to make.

Philippe Portevin, said, "Tailored solutions for high-end output, reduced costs with energy-efficient machines and automated treatment are the major benefits we are delivering to our customer with this supply. Colas wanted not just a supplier, but a responsible partner for their investment. We've set an ambitious target and we're confident in achieving it."

The installation includes a C160 jaw crusher, a HP500 cone crusher, two HP6 cone crushers, more than 12 vibrating machines from TS, CVB and VF range completed with more than 2,000 m of Metso conveyors.

The full engineering scope of the installation includes a truck loading station, automation and power, 2,000 tonne steel structures, plateworks, de-dusting, erection and commissioning

Shanbao's latest products include its new DY range of cone crushers.



CRUSHING AND SCREENING

Choices, choices



Oman-based Galfar Engineering SAOG is using a fleet of six Warrior 2400 screens from Terex Powerscreen to produce aggregates for road-building projects.

A spokesman for Galfar said, "We are very happy with the performance of our plant - each machine is working for up to 20 hours per day and producing high volumes of material. We find that the machines offer a low operating cost per tonne and we know that we can count on high speed local support from Genserv when we need it."

The Warrior 2400 screens are configured with a 150 mm punch plate on the top deck and with a 63 mm aperture mesh on the bottom deck, giving three end products. The -63 mm fines are used for base rock on road projects. The mid-size material (63 to 150 mm) is crushed with Terex cone and impact crushers to produce smaller products for re-screening, while the +150 mm material is processed with a variety of jaw, cone and vertical shaft impact crushers to produce other aggregate fractions as well as sand.

for a targeted 1.5 million tonnes/year and equipped with 4 MW of installed power.

But in other applications, where a contractor or quarry operator needs flexibility, mobile machines can be the answer.

This is illustrated by the 100th Warrior 2400 mobile screen manufactured by Terex's Powerscreen subsidiary, which was delivered to Galfar Engineering SAOG in Oman. The contractor had originally asked local distributor General Engineering Services (Genserv) about a scalping machine, but with outputs of 700 to 900 tonnes per hour required, along with the need for mobility, the recommendation came back for the Warrior 2400.

The initial order for two machines has since grown to six, including the 100th machine to roll off the production line. All six are currently working on the 45 km Phase 1 of the Al Batinah Expressway project, where high quality sub-base is being produced from feed material of a nearby wadi (river bed).



W.S. Tyler has launched a 4 ft (1.22 m) wide version of its F-Class vibrating screen

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The Petaquilla Gold Mine near Panama City, Panama is unusual in that it produces aggregates as well as precious metals. Contractor Panama Development of Infrastructure (PDI) is using a range of Sandvik drills, crushers and screens at the facility for the diverse production requirements.

Equipment on the site includes a Sandvik DX800 drill rig, UJ440i mobile crusher and QA450 triple deck Doublescreen mobile screener, supplied by national distributor Grupo Tecún.

David Baralt, general manager and chief operations officer at Servicios Mineros de Petaquilla said, "We are seeking friendly suppliers, who understand how their products are connected to our production. We strongly believe in Sandvik for the recognised quality of their equipment worldwide."

The UJ440i jaw crusher is used to process Andesite rock from the quarry, crushing down from 700 mm to 150 mm, at a production rate from 450 to 500 tonnes per hour.

The company also uses a QA450 triple deck Doublescreen, which is able to achieve a production rate of up to 600 tonnes per hour, depending on the material, the feed size, and the required fractions. It can produce four material sizes, plus an oversize from the grid and the high production capability is due to the patented Doublescreen screen box, which features two independent triple deck screen boxes. These have independent drives, that are able to have their amplitudes and screen angles adjusted depending upon application.

Components

And the choice of components such as screening media can be just as important as choosing the right capital equipment, as Sundre Contracting Co. of Sundre, Alberta, Canada found out. The company produces more than 30 different product sizes – from 1.6 mm fine sand to 305 mm screened rock for a range of customers from road builders, concrete plants and even golf courses.

Sundre Contracting's crushing & screening plant



The wash plant, fitted with Major Wire's Flex-Mat 3



However, the rainy climate and clay material it handles puts demands on its screening media, especially when it comes to avoiding blinding and pegging.

Having had trouble producing aggregates for a road project from clay-contaminated materials using traditional mesh, the company turned to distributor Elrus Aggregate Systems for a solution.

The recommendation that came back was to use Major Wire 7/8 in (22 mm)

Flex-Mat 3 Series D Tensioned screen media, and this produced dramatic results.

"The operation went from not being able to produce at all in marginally rainy weather to being able to operate through heavy downpours. We've recommended Major Wire's Flex-Mat 3 screen media before and knew it could stand up to the challenge of screening sticky, clay-ridden material," said Matt Armstrong, dealer representative at Elrus Aggregate Systems.

The self-cleaning media allows producers to increase open area, create more screening action and eliminate blinding and pegging problems as the wires are able to vibrate



This Sandvik UJ440i mobile crusher is used to produce aggregates from a unique site in Panama which is also a gold mine.



CRUSHING AND SCREENING

Choices, choices

A Metso C190 jaw crusher is the primary stage in a 1.5 million tonne/year greenfield installation for Colas in France.



independently at different frequencies.

Sundre said adopting the media has allowed production to double on rainy days, which equates to thousands of tonnes of extra production in a single day.

"We make more than 30 different products in our operation, from golf course sand, to concrete and road base aggregates and decorative stone. Flex-Mat 3 helps us screen and wash all products more efficiently and saves us thousands in lost

production each year. In addition, we estimate that its increase in open area provides us with up to +30% more screening capacity than before," said Jason Harder, manager of operations at Sundre Contracting.

This goes to show that getting a crushing and screening system right is about much more than the choice between a mobile or static plant. It is also important to consider seemingly less critical factors such as the choice of screening media. **ic**

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Beijing showcase

A record 1,500 exhibitors will take part in October's BICES exhibition in Beijing, China. **Helen Wright** reports.



Show details

BICES at a glance:

DATE: October 15-18, 2013

OPENING TIME:

October 15-17: 9:00-17:00

October 18: 9:00-16:00

VENUE:

Jiu Hua International Exhibition Center,
Xiaotangshan, Changping District,
Beijing, 102211, China

This year, over 120,000 visitors are expected to attend the 12th bi-annual BICES construction equipment exhibition, which takes place from 15 to 18 October at the Jiu Hua International Exhibition Center in Beijing. The show will cover a record 210,000 m² of exhibition space – up from 195,000 m² in 2011, but a lot has changed since the last time the event took place.

Market research company Off-Highway Research estimates that two years ago 487,870 construction machines were sold in China. But shortly after that the market suffered a sharp drop and sales fell -34% year-on-year in 2012.

It seems the heady days of over +30% year-on-year growth in equipment sales in China are over for now, at least. Off-Highway Research forecasts a +3% rise in construction equipment sales in 2013, followed by +11% growth next year to 367,417 machines, then a further +3% in 2015.

Despite the current trough in the market, the scale of this year's BICES show is greater than ever, with 1,500 exhibitors registered to attend, compared to 1,030 in 2011. As one of the two leading shows for the Chinese construction equipment sector, BICES is often the scene of some significant launches. The exhibition attracts all the big names in the industry, be they international players or big names in the Chinese domestic market.

Liugong, for instance, will launch its new 970E excavator at the show – 70 tonne class model targeted at the quarrying and mining industries. The

Liugong will launch its new 970E excavator at the show – a 70 tonne class model targeted at the quarrying and mining industries.



This year's event promises to be even bigger than 2011's record-breaking show.



Zoomlion's product showcase will include a 300 tonne capacity all-terrain crane.

970E features a Cummins QSX15 engine and Liugong's new electronic controller, which is said to ensure that the engine and hydraulics are matched to the application for fuel efficiency.

Maintenance points on the 970E are also grouped together for easy access. The machine features centralised, automated lubrication, and Liugong said maintenance intervals had also been extended.

Meanwhile, Zoomlion said it would have over 10 new and improved products on its stand, covering the concrete, mobile crane, earth moving and foundation sectors. These include a 300 tonne capacity all-terrain crane and a new a four-axle truck-mounted concrete mixer, the 12 CBM, which incorporates

technology from the manufacturer's Italian subsidiary Cifa in its frame that is said to reduce vibration during travel.

In addition, the company said it would have two excavators on its stand, equipped with high-power Cummins engines and high-flow hydraulic systems. It said GPS technology had also been added to allow performance to be constantly monitored.

Other products on display will be a re-designed and improved V series rotary drill. Zoomlion said technology including engine cold start protection and an improved high-speed spin-off function had been added, aimed at prolonging the life of the rig and improving its efficiency.

Another new machine on the Zoomlion stand will be the VK Series crusher and mill, for manufacturing sand from hard materials such as basalt and granite. Zoomlion claimed the machine could achieve particle shapes that were superior to that of an impact crusher.

Shantui, meanwhile, plans to launch three new machines at the show. These are the 10 m³ blade size SD32PLUS bulldozer, the 3 m³ bucket capacity SL50WN wheeled loader and the GT55 truck-mounted crane.

It said the SD32PLUS would be its centrepiece – part of a new line of PLUS dozers that it started rolling out this year. It said it was its most technologically advanced dozer yet, featuring an upgraded operator interface, a new 235 kW Cummins engine, and a more robust hydraulics system as well as electronic fault monitoring and diagnosis.

Meanwhile, the SL50WN wheeled loader a natural gas-powered machine, equipped with load-sensing hydraulics. And the GT-55 is one of the first machines produced by the Shantui-Manitowoc joint venture that was formed in January. It is a Tier III-compliant machine with a maximum lift height of 41 m.

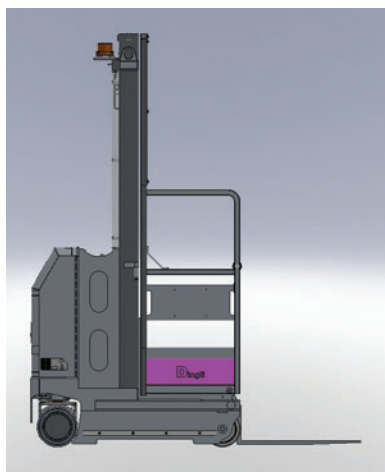
Other machines on display on Shantui's stand will include its SR14D-3 tandem electric vibratory roller, HJC5410THB-56 truck-mounted concrete pump and HZN40B concrete batching plant, which has a 40 m³/hour output.

Access equipment

From the access sector, Sinoboom will also be showcasing its latest new products at BICES, including the GTSZ30 spider lift. The machine can reach up to 30 m and boasts a wireless remote control device that works up to 100 m away.



Products on Sinoboom's stand will include the GTSZ30 spider lift, which can reach up to 30 m and boasts a wireless remote control device that works up to 100 m away.



Dingli will launch a new fork lift at the show, a model with a 5.5 m working height that has been designed for work in depots.

Other on-board technology includes an outrigger auto-levelling system and a gradual control system with proportional joystick. In addition, Sinoboom said it had installed several emergency safety systems and a multiple interlocking protection system to ensure the safety of operators.

Mantall will also be launching new access equipment in the form of its re-designed W-Series scissor lift. The machine's chassis has been redesigned so that it is now hollow, and a counter weight has been added to maintain stability. Mantall said the change reduced the overall weight of the machine.

In addition, the XDW180 self-propelled scissor lift will be on display. It has an 18 m working height features a wide areal work platform, four wheel drive and a diagnostics system to help pinpoint any maintenance issues. Other on-board technology includes a tilt level sensor and proportional controls. The XD140 RT, meanwhile, is a rough terrain model with a working height of 14 m. This machine also boasts a tilt level sensor and proportional controls.

Mantall will also have its HZ160D self-propelled articulated boom on show, featuring auto-levelling technology. It is also well-suited to rough terrain, and has a maximum gradeability of 45%.

Dingli, meanwhile, plans to launch a new self-propelled fork lift at the show, a model with a 5.5 m working height that has been designed for work in depots. It boasts a 500 kg capacity and an overall width of 860 mm. In addition, a self-propelled mast lift will also be on the stand, boasting a 10 m working height and an overall width of 760 mm – compact dimensions that Dingli said made the machine well-suited for operation in narrow areas.

ic

How to get to BICES

The venue is outside Beijing, so plan your travel

DRIVING

Input Jiuhua Spa & Resort, Xiaotangshan Town, Changping District, Beijing into GPS, or input latitude 40° 10 minutes 55 seconds and longitude 116° 24 minutes 28 seconds into GPS

TRAIN

From Beijing station, take Subway Line 2, change at Chongwen Gate Station and take Subway Line 5 to North Tiantongyuan Station. There is a free shuttle bus to the exhibition from here.

PLANE

Capital airport is about 30 km away from the exhibition venue. Allow 30 minutes to reach the exhibition by taxi and expect to pay a fare of about CNY 100 (US\$ 15)

FREE SHUTTLE BUS

A shuttle bus service is available from key hotels and railway stations in Beijing.

XCMG's 4000 tonne crawler crane successfully completes its first hoisting task in Yantai



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PROGRAMME

WEDNESDAY 20TH NOVEMBER

EVENING:

Welcome & drinks reception

THURSDAY 21ST NOVEMBER

MORNING:

**International construction issues
& keynote address**

AFTERNOON:

Managing complex international projects

EVENING:

Gala dinner & ICEF awards ceremony

FRIDAY 22ND NOVEMBER

MORNING:

**Improving safety & efficiency through modern
construction equipment**



DELEGATE PROFILE

Senior executives from:

- International contractors
- Equipment manufacturers
- Rental companies
- Business consultants

- International banks and financial institutions
- Material and product suppliers
- Trade associations
- Non-government organisations (NGO's)

ICEF EVENT CONTACTS

SPONSORSHIP OPPORTUNITIES:

Alister Williams
Tel: +44 (0)1892 786223
alister.williams@khl.com

EVENT INFORMATION:

Graham Anderson
Tel: +44 (0)1865 318123
Mob: +44 (0)7711 650691
graham.anderson@khl.com

EVENT & REGISTRATION INFORMATION:

Saara Rootes
Tel: +44 (0)1892 786243
saara.rootes@khl.com

EVENT PROGRAMME:

Chris Sleight
Tel: +44 (0)1892 786205
chris.sleight@khl.com

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WORLD-CLASS SPEAKERS

KEYNOTE SPEAKER

José María Aznar

Former Prime Minister of Spain

Mr Aznar will explore the importance of infrastructure investment within the context of globalisation and the need for innovative finance models at a time of government austerity. He will also focus on building stability and encouraging development in Latin America, where Spain has many links.



OTHER SPEAKERS INCLUDE

Jules Janssen

Treasurer of European International Contractors and head of construction at Besix

Scott Hazelton

Director of the IHS Global Insight's construction and manufacturing industries practice

Simon Purchon

Business development director, Mobile Assets, Babcock International

Miguel Jurado Fernández

General Manager of FCC Construcción

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INTERNATIONAL
rental
CONFERENCE **CHINA**
14 October 2013 Beijing

Industry first

The first International Rental Conference in China will take place on 14 October and support from the global industry has been strong.

Event details

Facts about the conference

WHAT

Full day conference and networking evening event

WHERE

Swissôtel, Beijing, China
No. 2, Chao Yang Men Bei Da Jie
Beijing 100027,
China

Tel: +86(10)6553 2288 ext. 2308

Mob: +86 138 0126 0596

Fax: +86(10)6501 4255

www.swissotel.com/beijing

WHEN

14 October 2013

www.khl.com/irc

The day before the BICES show kicks off, the inaugural International Rental Conference (IRC) will also take place at the Swissôtel in central Beijing, China.

Aiming to provide a high level forum for discussion, debate and networking for the world's equipment rental industry, the event will have a special focus on the emerging rental markets of China and wider Asia, and has enjoyed strong support from the global rental industry.

United Rentals CEO Michael Kneeland will be the keynote speaker at the conference, with Loxam CEO Gérard Déprez also speaking.

Supported by the International Powered Access Federation (IPAF) and the Construction Equipment Association (CEA), the conference is organised by *iC* sister publication *International Rental News (IRN)* together with KHL, the publisher of both magazines.

The CEA will use the event to showcase UK-made construction equipment to Asia and China's rental sector.

The conference also has the support of the Machinery Management & Rental Division of the China Construction Industry Association (CCIA). Indeed, the division's managing director, Jia Li Cai, will open the conference.

Presentations will highlight the development of China's rental sector and the role of equipment manufacturers in the industry. Speakers will come from established rental companies in mature markets as well as leading players in China.

In addition to Mr Kneeland and Mr Déprez, speakers include Jay Early (vice president, Europe/China for Hertz Equipment Rental Co), Bud Howard (global rental director at Volvo Rents) and Nick Sowden (president at Snorkel Asia).

Chinese speakers include Chai Zhao Yi, managing director of Shanghai Panguan Construction Equipment Rental, China's largest rental company, and Wang Li Chun, chairman of Xuzhou Gongli Road and Bridge Construction Machinery Co, a mid-size rental company based in Xuzhou.

A first in China

IRC will be the highest profile rental event ever held in Asia and the first time that the CEOs of the largest rental companies in North America and Europe have appeared together at a conference. It will act as a forum for the worldwide and Asian rental community, providing high-level advice on rental management and business trends.

Keynote speaker Mr Kneeland said, "I am enthusiastically

Speakers

The senior figures from the industry at the event

United Rentals CEO Michael Kneeland will be the keynote speaker at the inaugural International Rental Conference.



Jia Li Cai, managing director of the Machinery Management & Rental Division of the China Construction Industry, will open the conference.

Wang Li Chun, chairman of Xuzhou Gongli Road and Bridge Construction Machinery Co will also speak at the event.



Nick Sowden, president at Snorkel Asia, will also address attendees.

Yuan Zheng Chairman, Guangzhou Hailin will take part in a round table discussion focusing on rental trends in Asia.



John Bureau, general manager of Wynne Systems, will discuss using IT to improve rental efficiency at the conference.

Jay Early, vice president of Europe, Middle East and China at Hertz Equipment Rental Co will speak on opportunities in the Chinese rental market.



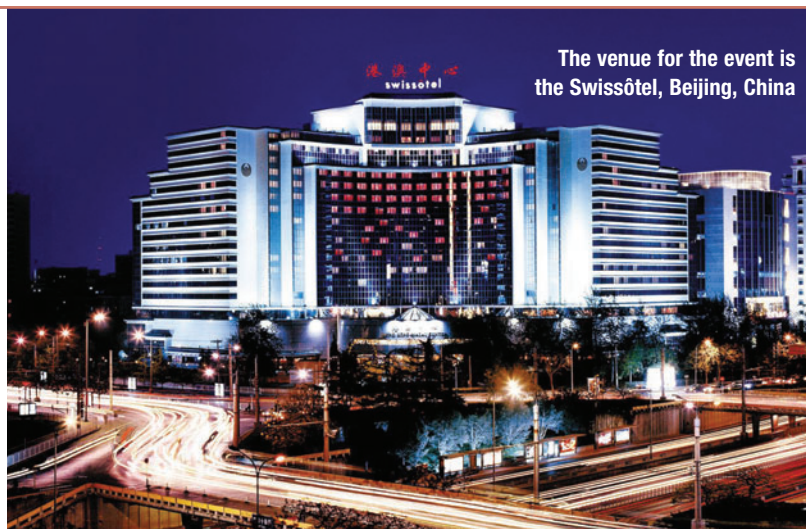
Gérard Déprez, CEO of Loxam, France, will share his experiences on the business models that could lead to success in rental.

looking forward to attending and presenting at the Rental Conference.

“By bringing together senior rental people from throughout Asia, we will have an opportunity to discuss latest global industry trends and share best practices. The timing couldn’t be better as rental continues to grow in established markets and begins to make progress in emerging markets. I hope to see you in Beijing.”

Murray Pollok, editor of *IRN*, said, “China is positioned to become one of the world’s most important equipment rental markets.

“The International Rental Conference will provide rental companies, equipment manufacturers and others with a fantastic insight into how the market will develop, and how China’s growing rental industry can learn from established rental players in other markets.” **ic**



The venue for the event is the Swissôtel, Beijing, China

Provisional programme

International Rental Conference China

MORNING SESSION:

08:00 – 09:00

Registration, networking and morning coffee

09:00 – 09:30

WELCOME & OPENING REMARKS:

OPENING REMARKS:

Conference Chairman

■ Murray Pollok, Editor, *International Rental News*

WELCOME:

■ Jia Li Cai, Managing Director, Machinery Management & Rental Division of the China Construction Industry Association (CCIA)

09:30 – 10:00

KEYNOTE SPEAKER

■ Michael Kneeland, CEO, United Rentals, USA

TOPIC: Customers come first: building a rental business

10:00 – 10:30

■ David Phillips, Managing Director, Off Highways Research, UK

TOPIC: Worldwide Construction Equipment Market & China Update

10:30 – 10:40 Q&A Session

10:40 – 11:10 Morning coffee

11:10 – 11:40

■ Bud Howard, Global Rental Director, Volvo Rents, USA

TOPIC: Emerging rental markets and the role of OEMs

11:40 – 12:10

■ Chai Zhao Yi, Managing Director, Shanghai Panguan Construction Equipment Rental

TOPIC: Crane Rental Trends in China

12:10 – 12:40

■ Nick Sowden, President Snorkel Asia/Global Supply Chain Director, Snorkel Lifts

TOPIC: The platform rental market in Asia; the road map for China’s future development?

12:40 – 13:00 Q&A Session

13:00 – 14:00 Lunch

AFTERNOON SESSION:

14:00 – 14:30

■ Gérard Déprez, CEO, Loxam, France

TOPIC: From emerging rental market to a mature industry.

While several business models (generalist/specialist; regional/global) can lead to success in rental, you have to choose an appropriate model and pursue it with real professional commitment. Mr Deprez, with decades of experience of rental dynamics in Europe, shares his expertise.

14:30 – 15:00

■ Wang Li Chun, chairman & founder, Xuzhou G&L Construction Equipment Rental Co., Ltd.

TOPIC: Promoting the Rental Concept in China

15:00 – 15:30

■ John Bureau, General Manager, Wynne Systems

TOPIC: Using IT to improve rental efficiency

15:30 – 15:40 Q&A Session

15:40 – 16:10 Afternoon tea

15:45 – 16:15

■ Jay Early, Vice-President Europe, Middle East and China, Hertz Equipment Rental Co (HERC)

TOPIC: Opportunities in the Chinese rental market

16:15 – 16:50 ROUND-TABLE SESSION

General discussion on rental trends in Asia

■ Tim Whiteman, CEO, IPAF

■ Mr Yuan Zheng Chairman, Guangzhou Hailin

■ Jay Early, VP Europe, Middle East, China Hertz Equipment Rental Corp (HERC)

Other participants to be announced

16:50 – 17:45

Questions followed by closing remarks and a networking drinks reception



For details and to book your place, visit www.khl.com/irc or use a smart phone to scan the QR code above to go directly to the web page.



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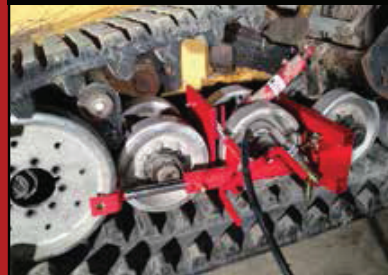
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International ambitions

Astec wants to double in size over the next five years and expand its international business so it accounts for half of its revenues. CEO-designate Ben Brock told **Chris Sleight** how it plans to make that journey.

Last year US-based Astec Industries, which makes equipment for the mining, infrastructure and energy industries had revenues of US\$ 936 million. It has set itself the task of doubling that over the next five years – so about +15% growth per year – and moving from the current 60:40 so split between domestic and international business to 50:50.

The headline growth figure is ambitious enough, but these figures imply an enormous international expansion to take revenues from the US\$ 364 million achieved in 2012 to somewhere north of US\$ 900 million.

That task will fall in a large part to Ben Brock, who was named as successor to his father and company founder Dr J. Don Brock earlier in the year. The succession plan is due to take effect before the end of 2013, and it will see current CEO Dr Brock become the company's executive chairman, with Ben Brock taking over as CEO.

Astec Industries owns more than a dozen individual brands in the asphalt, road building, aggregates and underground construction businesses. It has a decentralised structure, where each of these businesses and brands stands on its own to a large extent, with its own management running them.

So questions about how to grow internationally do not just include How? and Where? but also What?

Mr Brock said, "We are working on an asphalt plant design that would fit international markets a bit better than what we have at the moment and the aggregate group is coming out with some smaller crushers. You often have to change what you do a little bit, of course, to meet local codes and requirements.

"Of course we continue to look at acquisitions, and not all of them

will be in the US.

"If you look at that +15% annual growth figure we put out, our goal is +10% organic and +5% through acquisitions. The organic component would be things like changing products to meet market needs, or coming up with products we don't have yet to have a better fit in other countries."

Acquisitions are a fundamental part of how Astec has grown over the years following its foundation in 1972, and this has seen it move into other areas away from the initial asphalt plant business (the name 'Astec' comes from 'Asphalt Technology'). However, Mr Brock said any new additions would be likely to tie-in with its existing businesses.

"I think we're always going to be tied into the three areas we're in now – infrastructure, energy and mining. We'll stay close to that. We might consider an acquisition outside of those, but it would have to be fairly sizeable and have great management, because we are quite decentralised and we wouldn't want to jump into an area where we're not already present," he said.

In terms of expanding its footprint, the company has licensing agreements in place to serve India and China, and has its own subsidiaries in Australia, Brazil, Canada, Germany and South Africa, and according to Mr Brock, these locations are all ripe for expansion. For example, He said, "We are investing heavily in Brazil right now, and that is a pretty clear signal. If that goes well, it could be expanded into a sales operation."

Domestic prospects

As far as the company's US business is concerned, Mr Brock said there were some promising signs in a flat market. "The aggregates group has performed very well. Typically

that will start and 12 to 18 months later the asphalt business will come through. We haven't seen that yet, but we see pockets where it is trying to come back. But the rain here has been incredible this year. I was with a customer in Chicago before 4th July, and he had not worked a full week this year because of the weather!"

And of course, for a company so focussed on the road building

sector, the lack of secure funding for the country's roads (see this month's Regional Report) is a bone of contention.

"The Federal Highways programme in the US represents about 50% of the hot mix market, but it is 90% of the hope, and that Bill is not there yet. At the moment it is the private sector that is driving what growth there is," said Mr Brock.

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**Astec Industries
CEO-designate,
Ben Brock.**



Unlike many of his peers in China, Lonking CEO Qiu Debo doesn't believe in growth at any cost, doesn't want to acquire foreign companies (for now) and doesn't think the industry as a whole has the management skills to be truly international. Yet.

Chris Sleight reports.

Lonking president & CEO Qiu Debo.

Daring to be different

With revenues last year of US\$ 1.27 billion, Lonking is one of the larger Chinese construction equipment manufacturers. But at no.23 in the latest Yellow Table ranking of the industry's largest global players, it is some way adrift from the Chinese big three of Sany, Zoomlion and XCMG, which were placed at no.5, no.6 and no.11 respectively.

Far from suffering an inferiority complex, Lonking president & CEO Qiu Debo does not subscribe to the 'big is beautiful' doctrine that has seen many of his domestic competitors chase top-line growth. Strategies of growth by acquisition and rapid international expansion need to be done right, he says.

Speaking through a translator, Mr Qiu said, "In the last couple of years, lots of Chinese manufacturers have tried to go overseas but found it difficult. You need a lot of time to get the product right and there are lots of different requirements in different regions."

And on the subject of overseas acquisitions he added, "I think a lot of Chinese companies still lack the ability to manage foreign

companies. Some of the big Chinese companies in the industry clearly don't compare in terms of management to other international players of a similar size."

Summarising the difference in Lonking's philosophy, he said, "We have the same general aims as most, but while most Chinese manufacturers think about getting big first and then getting stronger, we want to be strong first."

The Lonking way

Lonking's plan for overseas growth is to edge up from current exports of some 4,000 machines per annum to about 10,000 in the next three to five years. That would account for about 20% of the company's revenues, but the longer term aim is to take the ratio of domestic sales to exports to 50:50.

So how does Mr Qiu plan to achieve this? At first it will all be about organic growth. "We will not consider acquisitions for the next five years or so. We need to work on management of what we do right now. We are not convinced that there have been great successes for acquisitions by Chinese companies overseas," he said.

Mr Qiu's vision for Lonking is for a more measured international expansion. "We are putting more resources into overseas markets. We have strengthened the management and, facilities, and worked on product quality. We believe you need to build up our channels first, with the right distribution and aftersales support," he said.

One day the company might manufacture overseas, but for now it is focussed on exporting machines. "Before we manufacture overseas we want to achieve a certain level of market share in key areas and sell a mix of products. I am open-minded about all the options, including joint ventures or our own subsidiaries, but we have not reached that stage yet," added Mr Qiu.

Domestic market

Meanwhile, the Chinese market itself is readjusting to much lower equipment volumes after the remarkable stimulus-driven boom of 2010 and 2011. Although morale is low in some parts of the industry, Mr Qiu regards the current state of the market as a return to normality.

"The situation is not bad – it has returned to reasonable growth. In previous years, growth was too high to be sustained," he said.

But that is not to say that it hasn't been a painful transition. "At the start of 2012 we started some changes. We are working more on cash flow, financial management and productivity, rather than producing high volumes of machines at any cost. 2012 was a tough year.

"We made 5,000 redundancies and our profit fell, but this year you will see changes and the figures will improve," said Mr Qiu.

Looking ahead he concluded, "There is still a long way to go to move China to a consumer economy, so I think for the next few years our industry will continue to benefit from infrastructure building."

"In five years' time there will be fewer Chinese manufacturers but I believe Lonking will be one of them and will be even more healthy than now.

"Lonking won't be the biggest but we will be one of the strongest in product quality, financial management and internal management."

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WHEN:

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Ed Bernard

Vice president, Precision Specialized



David Collett

Managing director, Collett & Sons
& President, ESTA



Marco van Daal

Owner, The Works International



Joel Dandrea

Executive vice president, Specialized
Carriers & Rigging Association (SC&RA)



Tim Ford

President, Terex Cranes



John Gillespie

Managing director of
Gillespies Crane Services



Alexander Hoffmann

Product manager, Rud Group



Søren Jansen

Director, ESTA



Andreas Köhler

Köhler Kran-Service



Klaus Meissner

President, European Federation of
Materials Handling (FEM)



Ronald J Montgomery

President, Intermountain Rigging
& Heavy Haul, president, SC&RA



Emma O'Dwyer

Vice president of market development and
corporate affairs, The Matcom Group



Léon Schöpping

Senior construction engineer and
PTE lifting and hoisting, Shell



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Organic development

Manitou's interim CEO plans to bring the company into a new era, as he explained to **Euan Youdale**

Dominique Bamas is passionate about Manitou's future, but that's no surprise considering he has known the company for 25 years and worked as an independent board member since 2009.

He stepped in when Jean Christophe Giroux departed as CEO in March and will remain in charge until a permanent replacement is found, and the company – with 3,200 employees and € 1.3 billion (US\$ 1.7 billion) annual revenues – will take its time to find the right person.

"The profile of the new CEO will be more operational and less financial," said Mr Bamas. "The objective is to have a CEO that will be close to the field and close to the commercial side of things – very hands on."

The opening of an assembly plant in Brazil sometime in the next two years could be on the agenda, but Mr Bamas said the assembly plant would be its only new facility in the immediate future, as the company's main focus of expansion

would be through new dealerships, and growth of existing ones in countries like Russia.

The new depot would assemble a range of Manitou products. "But assembly plants are not our main objective at the moment. We already have eight assembly plants – four in France, one Italy and three in the US. If we have +10 to +15% growth each year in the next five years, we will probably need more plants, but that is not the case for the moment," he said.

Mr Bamas added, "The main issue is to find the right go to market strategy to develop our brand. We have good products and industrial potential but in many countries we have a small market share, so we want to develop that."

Doubling output

Another of Manitou's strategies is to double its output of access equipment within five years. Powered access accounts for about 10% of production, and this will be increased to 20%. "It will be organic growth," he said. "We don't need to bother with new companies. We are a family-owned business, we are close to our products and our customers, and we want to develop this."

Manitou's biggest market is in its home country of France, plus other northern European countries and North America, following its acquisitions of a skid-steer loader range in the shape of Gehl, which includes the Mustang brand.

The company is now setting its sights on the BRIC nations, with a special focus on Brazil and Russia.

"We will try India and China but they are more difficult because the products we produce are not really well known, so we have to convince the market first to use telehandlers, and that's before we convince them to use Manitou," he said.

One of those opportunities may lie in rental, particularly in producing products that are attractive to rental companies.

"We already have sales to rental

companies, but what we mean by developing rental is mainly to have a line of products that are adapted to specific requirement of rental companies.

"The rental company probably needs products with less technology, but that are more robust. In the past we were more involved in high technology, and a rental fleet needs more of a basic product," said Mr Bamas.

He was quick to add that Manitou will not hold back on new innovation.

"The DNA of the company is technology, innovation, design, so we will not change that, but we have to change our mindset a little to be able to address different markets," he said.

Historically, the access equipment segment of Manitou has had a much smaller profile than the telehandler side of the business which represents a lion's share of revenues. But that is set to change, according to Mr Bamas.

"I really believe in the access equipment market, which probably has more potential than the telescopic handler market. Everyone knows Manitou is a telescopic handler manufacturer and it's probably one of the most famous brands in that area, but there are less customers who also know we are a player in the access platform market."

With his considerable knowledge and experience, Mr Bamas will be around for some time to lend support to the new CEO, unless, perhaps, he has thoughts of taking on the role permanently. "Of course it would be a great challenge. I like this company and I have known it for 25 years, and I have been involved with many different aspects of this company - that's why they offered me this transitional function.

"Manitou is a very attractive company. I don't say that to be politically correct, it's a great family business, with many, many attractive aspects," he concluded. **ic**



Dominique Bamas,
"Growth will be organic"



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