

# international construction

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*International Construction* (USPS No: 021-895) is published monthly by KHL Group and distributed in the US by DSW, 75 Aberdeen Rd, Emigsville, PA 17318-0437. Periodicals postage paid at Emigsville, PA. Postmaster: send address changes to *International Construction*, PO Box 437, Emigsville PA 17318-0437.



ISSN No: 0020-6415  
USPS No: 021-895  
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# COMMENT

One of the interesting facts to come out of the launch of the *Global Construction 2025* report (see this month's lead news story, page 6) is the estimated size of the worldwide construction industry. The authors – Global Construction Perspectives and Oxford Economics – put the current size of the world market at US\$ 8.7 trillion, and forecast that it will rise to US\$ 15 billion in real terms by 2025, by which time it will account for 13.5% of global economic activity.

The first thing to strike me was that US\$ 8.7 trillion is one of the largest estimates I have heard for the size of the global construction market. Other economists I have spoken to would put it between US\$ 7 trillion and US\$ 8 trillion. Having said that, the *Global Construction 2025* estimate is close to 10% of global GDP, which I have found to be a pretty good rule of thumb for estimating the size of individual and regional construction markets.

The second striking thing about the *Global Construction 2025* report is the rate of growth that is forecast for the industry. The underlying dynamic is that while global GDP is expected to grow by an average of +3.5% per year for the next 12 years, construction output will increase by some +4.3% per year. Hence the industry coming to represent a much bigger slice of the global economy by 2025.

The reasons given for this include population growth and increasing urbanisation, particularly in developing countries. This will mean the need for infrastructure of all kinds, as well as affordable housing, will rise much faster than other parts of the economy.

Trying to think what the world will be like in a decade's time can be a mind-boggling exercise, and trying to work out the implications for the industry of the *Global Construction 2025* report's findings is a challenge. There will be opportunities of course, but they will be in new markets offering a range of risks and rewards.

Having just compiled our annual study of the world's 200 largest construction companies (see page 18) I was struck by what this might mean for contractors. I am always taken aback by how fragmented the industry is, and always seems to have been. The largest contractor in the world, CSCEC had revenues of US\$ 88 billion last year. As big as this company is, that only has a 1% global market share – show me another industry where you can be market leader with a 1% share!

But is bigger necessarily better in this industry? The other point that the Top 200 study bears out is that despite an apparently strong and growing global market, construction is a business that struggles to make a decent profit. The average operating margin across the Top 200 is a meagre 4.3% and the best it has been in the last decade is 6.2%. That is far from impressive, and implies an industry with heavy competition and one which struggles to sell higher margin added-value services to its clients.

So maybe the way to capitalise on the good outlook for construction is not to get bigger and hope for economies of scale. History shows that they are hard to find in what is traditionally a labour-intensive business driven by low-cost tendering.

A more attractive plan would seem to be to find the technical niches and markets where a specialist can flourish.

**Chris Sleight**  
**Editor**



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International Construction, incorporating Construction Industry International and World Construction, is available free of charge on request to anyone who falls within the controlled circulation criteria. Official publication date is the 15<sup>th</sup> of each issue month.

It is available to anyone who does not meet the criteria at an annual subscription rate of UK£185, US\$295, €225. Single copies: UK£15, US\$24, €18.



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HIGHLIGHTS

**UAE** The Intermat Middle East construction equipment exhibition will take place from January 14 to 16, 2014, at the Abu Dhabi, UAE, National Exhibition Centre (ADNEC). The exhibition had been scheduled to take place a week later in January, but the dates clashed with the World Future Energy Summit. Next year's event will be the third time the show has taken place. Some 250 exhibitors are expected to participate, and 7,500 visitors are expected to attend.

**TURKEY** The European Investment Bank (EIB) has provided a further € 200 million (US\$ 260 million) loan to support an upgrade to Turkey's rail corridor between the capital, Ankara, and the country's largest city, Istanbul, to a high speed line. This additional funding brings total EIB support for the country's first high speed rail line to € 1.5 billion (US\$ 1.95 billion). The 490 km rail line will interconnect with the Marmaray Bosphorus rail tunnel, also supported by EIB funds.

**UK** The estimated cost of building a new North/South high-speed rail link in the UK has jumped by UK£ 8 billion (US\$ 12.3 billion) to UK£ 43 billion (US\$ 66 billion). The increases are due to new measures to minimise disruption and impact to the environment, including two extra tunnels, one in west London and the other near Birmingham. This line is expected to open in 2026, with construction scheduled to start in 2016.

**BANGLADESH** The World Bank has approved a financial package worth US\$ 400 million to improve Bangladesh's flood defences. The funds, which consist of a US\$ 375 million loan and US\$ 25 million grant, will be used to upgrade the embankment system to protect against tidal flooding and frequent storm surges in six coastal districts.

**EGYPT** Exhibition organiser Veronafiere, which runs the Samotir exhibition in Verona, has announced the launch of MS & Africa Middle East – a trade fair for stone design, technology, earthmoving and building machinery which will take place in Egypt this December. The inaugural event will be held in Cairo, from 9 to 12 December.

GLOBAL

# Emerging markets to drive global growth

## Asia and sub-Saharan Africa to lead the way over the next 12 years

A new report, *Global Construction 2025*, from Global Construction Perspectives and Oxford Economics shows that developing countries will drive construction growth over the long-term. This is true of different regions of the world, while key countries such as Qatar and Nigeria will be among the fastest growing.

Jeremy Leonard of Global Construction Perspectives and Oxford Economics said of the broad economic picture, "Emerging markets will continue to grow significantly more rapidly than the developed world, but that growth will be at a slightly less robust pace than in the past. We've seen a change in some of the drivers in some of the emerging markets."

He highlighted the move in China towards a more consumer-driven economy and the slow pace of reform in Brazil and India as examples of this.

"People who expect China to grow by +10%, as it has done for the last decade, are going to be disappointed. Growth is going to be nearer +7%," he said.

While emerging markets are expected to see robust growth, the report's authors were down-beat on the prospects for some key developed markets. "We can't expect much more than +2% growth over the next decade or so," said Mr Leonard. "We tend to talk about Europe as a lost decade of growth. Even when we get out of the current cyclical downturn, we only see about +1.8% growth in 2015 – 2020," he added.

Overall, global construction output is expected to grow at +4.3% a year over the next 12 years, compared to +3.5% for GDP growth. Western European construction is expected to under-perform, with an annual average of just +1.0%, the same rate as the developed countries of Asia-Pacific. Latin America is also expected to be below trend with +3.5% annual construction growth.

North American markets are expected to be more or less on the global trend at +4.2% annual growth, while Eastern Europe (+4.6%) and the Middle East and North Africa (+4.9%) are expected to be ahead of the curve. The most robust growth is expected to be in sub-Saharan Africa (+5.0%) and emerging Asia-pacific (+6.9%).

■ For more information, visit [www.globalconstruction2025.com](http://www.globalconstruction2025.com).

UK

## JCB names new CEO

Graeme Macdonald will take over as CEO of construction equipment manufacturer JCB at the end of this year, when incumbent Alan Blake retires.

Mr Macdonald was previously COO of JCB and became CEO designate on 1 June. During his 16 years at the company, has also been managing director of the backhoe loader business and president of JCB Inc –

the company's North America base in Georgia, US.

Mr Blake will remain as a senior advisor and board member of JCB.

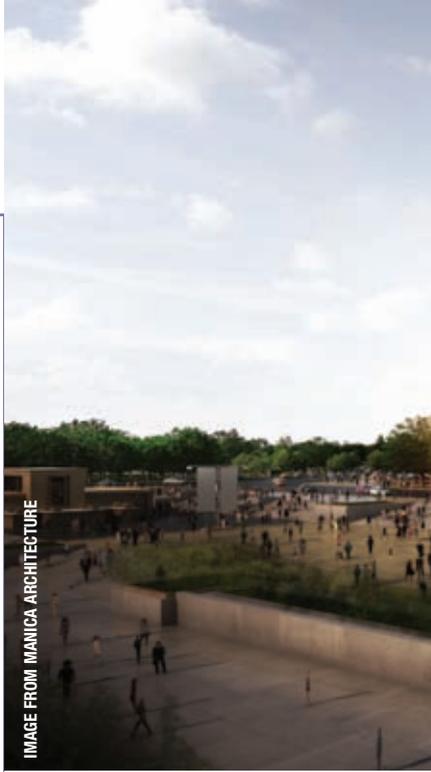


IMAGE FROM MANICA ARCHITECTURE

CANADA

## Mayor arrested

After taking office at the end of last year promising to end corruption, Michael Applebaum, the mayor of the Canadian city of Montreal, has resigned following his arrest on 14 fraud charges.

Mr Applebaum said the accusations against him, which relate to real estate projects in Montreal during his time as a borough mayor between 2006 and 2011, were unfounded. The charges include defrauding the government, breach of trust and conspiracy.

Mr Applebaum replaced former Montreal mayor Gerard Tremblay, who resigned in November last year amid separate allegations related to illegal donations.

And Mr Applebaum and Mr Tremblay are not the first former Mayors to face corruption charges in recent months. In May, Gilles Vaillancourt, the former mayor of Laval in Quebec, Canada, was one of 37 people arrested over charges of construction-linked fraud and ties to organised crime.

The resignations and arrests come amid an on-going and high-profile public inquiry into the corruption in construction industry in Quebec. – the Charbonneau Inquiry.

The inquiry has already heard testimony from politicians and senior figures from the construction industry detailing mafia kick-backs and a web of corruption involving the public procurement of construction contracts.

## DIARY DATES

2013

**Matexpo 2013**

September 4 – 8, 2013  
Kortrijk, Belgium  
[www.matexpo.com](http://www.matexpo.com)

**Bauma Africa 2013**

September 18 – 21, 2013  
Johannesburg, South Africa  
[www.bauma-africa.com](http://www.bauma-africa.com)

**International Construction Equipment Congress**

September 19 – 20, 2013  
Istanbul, Turkey  
[www.vision2023turkey.org](http://www.vision2023turkey.org)

**BICES 2013**

October 15 – 18, 2013  
Beijing, China  
[www.e-bices.org](http://www.e-bices.org)

**International Construction Economic Forum (ICEF)**

November 20 – 22, 2013  
Amsterdam, the Netherlands  
[www.khl.com/icef](http://www.khl.com/icef)

**Excon 2013**

November 20 – 24, 2013  
Bangalore, India  
[www.excon.in](http://www.excon.in)

**MS Africa & Middle East**

December 9 – 12, 2013  
Cairo, Egypt  
[www.msafrika.net](http://www.msafrika.net)

2014

**Intermat Middle East**

January 14 – 16, 2014  
Abu Dhabi, UAE  
[www.intermatme.com](http://www.intermatme.com)

**World of Concrete**

January 21 – 24, 2014  
(Seminars 20 – 24 January)  
Las Vegas, US  
[www.worldofconcrete.com](http://www.worldofconcrete.com)

**ConExpo-Con/Agg 2014**

March 4 – 8, 2014  
Las Vegas, US  
[www.conexpoconagg.com](http://www.conexpoconagg.com)

**SMOPYC 2014**

April 1 – 5, 2014  
Zaragoza, Spain  
[www.smopyc.com](http://www.smopyc.com)



## NICARAGUA

**Panama Canal alternative**

The Nicaraguan Congress has approved a law to allow a Chinese company to construct and operate a trans-oceanic canal. The agreement could see Hong Kong Nicaragua Canal Development Investment Co. (HKND Group) construct the US\$ 40 billion canal over a ten-year period and then operate it for up to a century.

The law was passed by 61 votes to 25, with one abstention in the face of public protests. The project has not been subject to a public tender and has been criticised as a loss of Nicaraguan sovereignty.

The route of the canal has not been finalised, but it would be likely to make use of Lake Nicaragua in the west of the country near the Pacific coast. However, in order to reach this from the Atlantic side, at least a 100 km route would have to be excavated.

In other news, the Honduran government has signed a memorandum of understanding with China Harbour Engineering Company (CHEC) to build Pacific and Atlantic ports, linked by rail lines as a further inter-oceanic trade link. The cost is put at US\$ 20 billion.

Guatemala has been looking into a similar scheme, which would see two ports linked by a new 390 km high-speed rail line, with gas and oil pipelines running alongside it.

**RUSSIA** Vinci has won a contract to construct the new Dynamo Moscow stadium, 5 km northwest of central Moscow. The US\$ 1.5 billion project involves the construction of a new 27,000-seat football stadium, a 12,000-seat multi-purpose indoor arena, 30,000 m<sup>2</sup> shopping centre, multiplex cinema and 730 underground parking spaces on the site of the old Dynamo Stadium, which was closed for demolition in 2008. The scheme is scheduled for completion in 2017.

## SOUTH AFRICA

**Collusion settlement**

A group of 15 contractors active in South Africa has agreed to pay fines totalling ZAR 1.46 billion (US\$ 145 million) for anti-competitive behaviour. The penalties were agreed with South Africa's Competition Commission under its Construction Fast Track Settlement Process, which was launched in February 2011.

The 15 contractors named in the settlement were, Aveng, Basil Read, Esorfranki, G Liviero, Giuricich, Haw & Inglis, Hochtief, Murray & Roberts, Norvo, Raubex, Rumdel, Stefanutti, Tubular, Vlaming and WBHO. Fines ranged from ZAR 155,850 (US\$ 15,400) for Esorfranki to more than ZAR 300 million (US\$ 30 million) for Aveng, Murray & Roberts, Stefanutti and WBHO.

The commission said it found more than 300 cases of bid-rigging on projects concluded after 2006. Schemes finished before this cut-off are beyond the prosecutorial reach of South Africa's Competition Act.

It added that anti-competitive behaviour among contractors included holding meetings to divide markets and agree margins, the submission of artificially high tenders to favour competitors (cover

pricing) as part of market sharing agreements and the payment of a 'losers fee' by the winner of a contract to cover others' bidding costs.

Competition commissioner Shan Ramburuth said, "In revealing the extent of collusion in the construction industry, the Commission's fast track settlement broke up existing cartels and created awareness of collusive practices in the industry. Embedding a competitive culture will be critical to bringing down the costs of future infrastructure investments and will incentivise firms towards innovation and efficiency in future projects.

Henry Laas, CEO of Murray & Roberts said, "After an exhaustive process, we have finally reached settlement with the Commission. The investigation and its subsequent burden on our reputation have weighed heavily on our employees and stakeholders. To the best of our knowledge, there is no anti-competitive conduct present within the group and the Board and management continue to set the vision for and commitment to a morally and ethically sound culture within Murray & Roberts."

GLOBAL

## CoST appeals for funding

The Construction Sector Transparency (CoST) initiative needs US\$ 20 million over next three years to continue its work to increase transparency and reduce corruption in the global construction industry, according to the organisation.

CoST was launched in October following a three-year pilot scheme. It is designed to make information public about construction projects and how they are awarded.

Current funding ends in December 2014, and the extra funds would allow the scheme to expand from the nine countries currently participating to 22 and establish regional support structures.

CHINA

## Guilty plea

Liu Zhijun, China's Minister for Railways from 2003 to 2011, has pleaded guilty to accepting bribes in connection with construction of the country's high-speed rail network. The trail follows his arrest and removal from office in March 2011 and his subsequent expulsion from the Chinese Communist Party in May 2012.

Mr Liu has admitted to accepting CNY 64.6 million (US\$ 10.5 million) in cash bribes and CNY 800 million (US\$ 130 million) in property between 1986 and 2011. He also said he received other inducements, including shares, cars and works of art. They were given in exchange for construction contracts as well as for jobs within China's railway organisation.

As part of his guilty plea, Mr Liu has asked for leniency in sentencing, and is reported to have expressed remorse and wept in court. The court was also asked to recognise Mr Liu's positive contribution to China's infrastructure, particularly his work overseeing the development of the country's high-speed rail network.

A date has not yet been given for the announcement of the court's verdict and Mr Liu's sentence. Corruption can be punished by death in China.

RUSSIA

## Sochi corruption put at US\$ 30 billion

Opposition politician alleges up to 60% of the construction budget for the 2014 Winter Olympics has been 'stolen'

Russian opposition politician Boris Nemtsov has alleged that corruption among officials and businesses working on the 2014 Sochi Winter Olympics has added US\$ 30 billion to the cost of constructing venues and infrastructure. He said the original budget of US\$ 12 billion has rocketed to US\$ 50 billion, making the games the most expensive Winter or Summer Olympics ever.

The allegations were made in a new report, *Winter Olympics in the Subtropics*, written by Mr Nemtsov and Leonid Martynyuk, who is a member of the Russian liberal Solidarity movement.

One of the examples cited in the report is that of the 40,000-seater Fisht Olympic Stadium, which will host the opening and closing ceremonies for the event. The initial budget for this project was RUR 7.5 billion (US\$ 240 million), but the authors say this has now escalated to RYR 23.6 billion (US\$ 760 million).

This gives it a cost per seat of US\$ 19,000, whereas Mr Nemtsov and Mr Martynyuk say the average cost for Olympic venues from 1998 to 2012 was much lower, at only US\$ 6,000 per seat.

Overall, they say the cost of venues and supporting infrastructure at Sochi is two to three times higher than previous comparable events – a disparity which they put down to corruption.

"The overall scale of theft is about US\$ 25 billion to US\$ 30 billion, or 50-60% of the declared value of the final Olympics. And this is at a minimum... What is interesting: not a single criminal case of fraud, embezzlement, bribery and kickbacks at the Olympics did not come to court," said the report. The Russian government has not commented on the report's findings.

**US A joint venture between Skanska USA and Kiewit Construction has won the US\$ 743 million contract to upgrade the Bayonne Bridge, connecting New York with New Jersey. The project involves replacing the main span roadway and bridge approach structures, as well as raising the roadway, and replacing the electrical and drainage systems, and painting the bridge. Construction has already started, and is scheduled for completion in March 2017.**



AUSTRALIA

## Fraud ban

The World Bank has banned Australian engineer and consultant GHD and two of its subsidiaries – GHD Indonesian Operating Center and PT Global Hutama Desain – from projects it finances for one year.

The debarments follow an investigation by the Bank which it said found evidence of fraud on a management consultancy contract for a Bank-financed infrastructure project in Indonesia. The debarment came into effect on June 10.

And the bans also follow a string of similar actions by the World Bank as it seeks to crack down on corruption on projects it funds.

Leonard McCarthy, World Bank integrity vice president, said, "There is no excuse for international companies not to ensure they have a code of ethics and integrity that can govern their involvement in projects benefitting the poor.

"Meeting the provisions of the World Bank's compliance standards is a prerequisite to doing business with the Bank."

EUROPE

## Forecasts downgraded

The Euroconstruct network of European construction forecasters has revised its expectations for the market in 2013 to a decline of -3% – deeper than the -2.5% decrease it forecast at the end of last year.

The outlook for Europe's construction output in 2014 has also changed, from expected growth of +1% to an increase of just +0.5%. Growth of +1.7% for 2015 is currently forecast.

The worst declines forecast in construction output next year are in Spain (-7.7%) and Portugal (-3.5%), while the largest increases are predicted for Norway (+4.6%) and Sweden (+3.5%).

In terms of sectors, residential construction shows the most promise between now and 2015. Output is expected to decline -2.2% this year before returning to +1.1% growth in 2014, increasing to +2.3% in 2015.



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**BUSINESS HIGHLIGHTS**

**FINLAND** Metso has announced a demerger plan that will see the company's pulp, paper and power divisions separated from its automation and mining & construction divisions. The mining, construction and automation company will retain the Metso name, while the pulp, paper and power business will be named Valmet.

**SOUTH AFRICA** Sandro Scherf, CEO of South African aggregates processing equipment supplier Pilot Crushtec, has fully acquired the company through a management buy-out (MBO). The company supplies mobile and semi-mobile, crushing, screening, recycling, sand washing and material handling equipment through a combination of equipment it manufactures itself and the distribution of other companies' machines.

**ITALY** Salini and Impregilo have approved the terms of their merger, creating a new listed company known as Salini Impregilo that is targeting consolidated revenues of € 7.4 billion (US\$ 9.7 billion) by 2016. The merger will be effective from the start of 2014.

**AUSTRALIA** Lend Lease plans to restructure its Australian operations and has warned of reduced profits this year. The company's four Australian construction businesses – Abigroup, Boulderstone, Project Management & Construction and Infrastructure Services – will be merged into three, with individual focuses on building, engineering and infrastructure.

**BRAZIL**

# Votorantim suspends US\$ 4 billion+ IPO

Brazil's largest cement producer pulls out of cement stock market float amid pricing concerns

Votorantim has postponed a US\$ 4 billion+ initial public offering (IPO) of a stake in its cement business, Votorantim Cimentos, citing concerns about pricing, new regulations and weakening market conditions.

The listing of the unit on both the Bolsa de Valores in São Paulo, Brazil and the New York Stock Exchange has been suspended after bids came in below the planned BRL 16.00 to BRL 19.00 (US\$ 7.80 to US\$ 9.26) per share price range.

Other factors weighing on the IPO included a general stock-market deterioration amid a slow-down in Brazil's economic growth and a proposed new regulation in Brazil that could see royalties on mining and quarrying increased from 2% to 4% of total revenues, which Votorantim said would affect its business.

Votorantim Cimentos had revenues of BRL 9.48 billion (US\$ 4.71 billion) last year and net profits of BRL 1.64 billion (US\$ 815 million).

**NORTH AMERICA**

# Lafarge's US\$ 700 million gypsum sale

Cement producer Lafarge has continued to dispose of non-core businesses with the sale of US\$ 700 million worth of gypsum plants to an affiliate of private equity company Lone Star Funds.

Lafarge North America's gypsum division manufactures gypsum wallboards and joint compounds throughout a network of plants in the US and Canada. In 2012, these

operations had sales of US\$ 310 million.

Lafarge said its latest round of asset sales completed the group's refocusing on its core businesses – cement, aggregates and ready-mixed concrete. In 2011 it sold the other parts of its global gypsum business in three separate transactions for total proceeds of € 1.55 billion (US\$ 2.02 billion).

**AUSTRIA**

# Alpine collapse

Contractor Alpine Bau has gone into voluntary insolvency with net debts of € 625 million (US\$ 815 million). It said the decision was a result of delays in a programme of divestments and the deterioration in its trading position since the first quarter of 2012.

Alpine is majority-owned by Spain's FCC. The parent company has made a € 289 million (US\$ 375 million) provision in its 2013 accounts for Alpine's insolvency.

**SOUTH AFRICA**

# Asset sale

Contractor Murray & Roberts has sold the majority of its construction products businesses for ZAR 1.33 billion (US\$ 132 million). Asphalt producer Much Asphalt was bought by private equity company Capitalworks, while Ocon Brick, Technicrete and Rocla, which make bricks and concrete products, were sold to a private equity consortium that included Capitalworks. Murray & Roberts is still looking for a buyer for Hall Longmore, which makes steel pipes.

**FRANCE**

# Services sale

Spie is to acquire Hochtief's Service Solutions business for € 250 million (US\$ 326 million). Spie beat several rival offers for the business, including a bid from YIT. The transaction is due to close at the end of this year, and will be retroactively effective from 1 January 2013.

**QATAR**

# Metro contracts

A consortium comprising Porr, SBG and HBK won a € 1.89 billion (US\$ 2.45 billion) contract to build the 16.6 km Green Line of the Doha metro. Vinci leads the consortium awarded the €1.5 billion (US\$ 2 billion) contract for the 13.8 km southern red line, and Impregilo leads the consortium for the € 1.7 billion (US\$ 2.2 billion) contract for the 13 km northern red line.

## Exchange rates: June 2013

VALUE OF 1:	SYMBOL	AUS	BRL	UK£	CNY	€	INR	YEN	MXN	RUR	SAR	ZAR	KRW	CHF	US\$
Australian Dollar	AUS\$		0.48	0.665	6.36	0.789	55.6	100	12.58	32.0	3.87	9.24	1137	0.965	1.031
Brazilian Real	BRL	2.07		0.321	3.07	0.381	26.8	48.5	6.07	15.4	1.87	4.46	549	0.466	0.498
British Pound	UK£	1.50	3.12		9.6	1.19	83.6	151	18.9	48.1	5.81	13.9	1710	1.45	1.55
Chinese Yuan	CNY	0.157	0.326	0.105		0.124	8.74	15.8	1.98	5.03	0.608	1.452	179	0.152	0.162
Euro	€	1.27	2.63	0.84	8.07		70.5	127	15.9	40.6	4.90	11.71	1442	1.22	1.31
Indian Rupee	INR	0.018	0.037	0.012	0.114	0.014		1.8	0.226	0.576	0.0696	0.166	20.5	0.0174	0.0186
Japanese Yen	YEN	0.010	0.021	0.007	0.063	0.008	0.553		0.1253	0.319	0.0385	0.0920	11.3	0.0096	0.0103
Mexican Peso	MXN	0.080	0.165	0.053	0.506	0.063	4.42	7.98		2.54	0.307	0.734	90	0.077	0.0820
Russian Ruble	RUR	0.031	0.065	0.021	0.199	0.025	1.74	3.14	0.393		0.121	0.289	35.5	0.0302	0.0322
Saudi Riyal	SAR	0.259	0.536	0.172	1.645	0.204	14.373	25.973	3.253	8.275		2.39	294	0.250	0.267
South African Rand	ZAR	0.108	0.224	0.072	0.689	0.085	6.016	10.871	1.362	3.463	0.419		123	0.104	0.112
South Korean Won	KRW	0.0009	0.0018	0.0006	0.0056	0.0007	0.0489	0.0883	0.0111	0.0281	0.0034	0.0081		0.00085	0.0009
Swiss Franc	CHF	1.04	2.15	0.69	6.59	0.82	57.59	104.06	13.03	33.15	4.01	9.57	1178		1.068
US Dollar	US\$	0.97	2.01	0.645	6.17	0.765	53.9	97.4	12.2	31.03	3.75	8.96	1102.9	0.936	

For example US\$ 1 = AUS 0.97



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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](http://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](http://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](http://pocketmags.com) for either KHL or the title of the magazine you want to read.

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# Full programme for China Rental Conference announced

Senior figures to discuss industry's prospects in China at inaugural event

**F**ull programme details for the first International Rental Conference in China are now available online, with high-level participants from companies including United Rentals, Loxam, Hertz Equipment Rental Co (HERC), Volvo Rents and Snorkel.

United Rentals CEO Michael Kneeland will be the keynote speaker at the IRC conference on 14 October, 2013, with Loxam CEO Gérard Déprez also speaking.

Other speakers include Jay Early, vice president of Europe and China for Hertz Equipment Rental; Bud Howard, global rental director at Volvo Rents and Nick Sowden, president of Snorkel Asia.

Chinese speakers include Chai Zhao Yi, managing director of Shanghai Panyuan 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.

The conference, organised by *iC* sister publication *International Rental News* and its publisher KHL, will take place at the Swissôtel in Beijing, the day before the BICES exhibition starts, which runs from 15 to 18 October.

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.

The full programme, and booking details, can be found at [www.khl.com/irc](http://www.khl.com/irc).



## 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](http://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](http://www.khl.com) or scan the QR code to access the latest edition. The online archive at [www.khl.com](http://www.khl.com) now stretches back more than two years.



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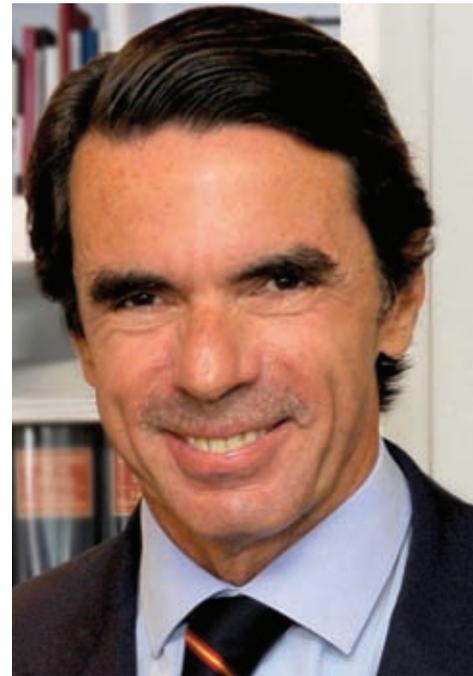
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# José María Aznar to give ICEF keynote address

Former Spanish Prime Minister will explore globalisation and how it relates to the construction industry.



Former Spanish Prime Minister, José María Aznar

**F**ormer Spanish Prime Minister José María Aznar will give the keynote address at the International Construction Economic Forum (ICEF), which takes place in Amsterdam, the Netherlands, from 20 to 22 November.

Mr Aznar, who was in office from 1996 to 2004, will speak about the challenges of globalisation and free trade, and how they relate to the international construction sector.

As well as exploring the power and purpose of globalisation, highlighting the ramifications for underdeveloped countries, Mr Aznar will focus on building stability and encouraging development in Latin America, where Spain has many links.

At ICEF he 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.

Mr Aznar, 60, sits on the board of directors of News Corporation, is senior advisor to the Global Board of DLA Piper, a member of the International Advisory Board of Barrick Gold Corporation, a member of the International Advisory Board of the Atlantic Council of the United States and co-chairman of the Atlantic Council's Trans-Atlantic Task Force on Latin America, as well as an executive president of the Foundation for Social Studies and Analysis.

## ICEF details

ICEF will take place at the Hotel Okura in Amsterdam, the Netherlands. The conference, networking event and awards dinner will focus on core themes of trends and forecasts in the global construction industry, project finance, successful project management and delivery, equipment technology and asset management.

The programme is designed to appeal to a broad range of executives and senior managers throughout the construction industry from disciplines such as contracting, equipment manufacture, materials production, equipment rental, finance, project management and consultancy.

The evening of 21 November will also see a gala dinner and the award of prizes in nine categories for outstanding performance in the construction industry. The most sought-after is expected to be the *International Construction Project of the Year* award, which will recognise a scheme worth US\$ 100 million or more, of international significance.

■ For more information visit [www.khl.com/icef](http://www.khl.com/icef)

## Fast facts

The what, where and when of ICEF

### WHAT?

Conference, awards ceremony and networking event for the global construction industry

### WHERE?

Hotel Okura, Amsterdam, the Netherlands

### WHEN?

20 – 22 November, 2013



### ATTEND ICEF

Details of how to book your place at ICEF are available under the 'Booking' tab of [www.khl.com/icef](http://www.khl.com/icef). The website also includes the latest news on speakers at ICEF and other details about the event.

### MORE DETAILS:

[www.khl.com/icef](http://www.khl.com/icef)

iC

# The global top 200

Although Chinese contractors dominate the top 10 of our league table, the downturn in their domestic market has had an impact on standings throughout the Top 200.

**Chris Sleight** reports.

With five Chinese contractors within the top 10 of *iC's* league table of the world's largest construction companies, it is fair to say that they continue to dominate the very top end of the industry. The big three – China State Construction & Engineering (CSCEC), China Railway Construction and China Railway Group are unchanged in their positions from last year, while there is quite a gap to fourth – placed Vinci from France, once itself the clear world no. 1.

Elsewhere in the top 10, ACS and its partially-owned subsidiary Hochtief have improved their standings, as has Bechtel of the US, and these have come at the expense of China Communications Construction and China Metallurgical Group (MCC).

This in itself is unusual. Over recent years Chinese construction companies have seemed to march relentlessly up the league table, but the 2013 ranking, based on revenues in 2012, has seen a definite change of fortunes.

Of the 11 Chinese companies listed in the Top 200, only one, Guangsha Construction Group, has improved its position compared to last year. Of the remainder, seven have lost ground, while the three largest are unmoved from 2012.

This illustrates what appears to be a growing divide between the big three Chinese contractors and the country's other players. The group of CSCEC and the two railway specialists saw their total revenues increase some US\$ 27.7 billion last year for an above average increase of +13%. Their total US\$ 237 billion revenues accounted for almost two thirds of sales for all Chinese companies in the Top 200.

In contrast, the remaining eight Chinese contractors in the Top 200 saw their revenues decline by an average of -6% year-on-year, with the impact on their standings in the league table that has already been noted.

Where there are fallers in the league table, there of course also have to be gainers, and there are several key groups of companies that have improved their standings since last year.

	Sales Company (US\$ million)	Country	2012	Change	Website
1	88107 <b>China State Construction &amp; Engineering (CSCEC)*</b>	China	1	↔	www.cscec.com.cn
2	74787 <b>China Railway Construction Corporation</b>	China	2	↔	www.crcc.cn
3	74646 <b>China Railway Group</b>	China	3	↔	www.crec.cn
4	49653 <b>Vinci</b>	France	4	↔	www.vinci.com
5	49347 <b>ACS</b>	Spain	6	↑1	www.grupoacs.com
6	45875 <b>China Communications Construction</b>	China	5	↓1	www.crbc.com
7	37900 <b>Bechtel</b>	US	9	↑2	www.bechtel.com
8	33508 <b>Bouygues' Construction Divisions</b>	France	8	↔	www.bouygues.com
9	32809 <b>Hochtief</b>	Germany	10	↑1	www.hochtief.de
10	28506 <b>China Metallurgical Group (MCC)</b>	China	7	↓3	www.mcc.com.cn
11	27577 <b>Fluor</b>	US	11	↔	www.fluor.com
12	25146 <b>Daiwa House</b>	Japan	12	↔	www.daiwahouse.co.jp
13	20210 <b>Sekisui House</b>	Japan	15	↑2	www.sekisuihouse.co.jp
14	19562 <b>Leighton Holdings</b>	Australia	13	↓1	www.leighton.com.au
15	19045 <b>Skanska</b>	Sweden	17	↑2	www.skanska.com
16	18597 <b>Kajima Corporation</b>	Japan	18	↑2	www.kajima.co.jp
17	18137 <b>Obayashi</b>	Japan	24	↑7	www.obayashi.co.jp
18	18029 <b>Eiffage</b>	France	14	↓4	www.eiffage.fr
19	17739 <b>Taisei Corporation</b>	Japan	22	↑3	www.taisei.co.jp
20	17733 <b>Shimizu Corporation</b>	Japan	21	↑1	www.shimz.co.jp
21	17182 <b>Saipem</b>	Italy	20	↓1	www.saipem.it
22	16686 <b>Strabag</b>	Austria	16	↓6	www.strabag.com
23	16051 <b>Sinohydro</b>	China	19	↓4	www.sinohydro.com
24	14333 <b>FCC</b>	Spain	23	↓1	www.fcc.es
25	13814 <b>Balfour Beatty</b>	UK	25	↔	www.balfourbeatty.com
26	12498 <b>Takenaka Corporation</b>	Japan	27	↑1	www.takenaka.co.jp
27	12036 <b>Lend Lease</b>	Australia	37	↑10	www.lendlease.com.au
28	11833 <b>Hyundai Engineering &amp; Construction</b>	South Korea	29	↑1	www.hdec.co.kr
29	11804 <b>Shanghai Construction Group</b>	China	26	↓3	www.shconstruction.cn
30	10973 <b>URS Corporation</b>	US	35	↑5	www.urscorp.com
31	10936 <b>Bilfinger</b>	Germany	28	↓3	www.bilfingerberger.de
32	10904 <b>Construtora Norberto Odebrecht*</b>	Brazil	39	↑7	www.odebrecht.com
33	10894 <b>Jacobs Engineering</b>	US	31	↓2	www.jacobs.com
34	10544 <b>Technip</b>	France	36	↑2	www.technip.com
35	10381 <b>Peter Kiewit*</b>	US	33	↓2	www.kiewit.com
36	10187 <b>Larsen &amp; Toubro E&amp;C</b>	India	45	↑9	www.larsentoubro.com
37	10160 <b>Samsung Engineering</b>	South Korea	42	↑5	www.samsungengineering.co.kr
38	10003 <b>Abengoa</b>	Spain	34	↓4	www.abengoa.es
39	9878 <b>Ferrovial</b>	Spain	32	↓7	www.ferrovial.es
40	9516 <b>Bam Group</b>	Netherlands	30	↓10	www.bam.nl
41	9106 <b>Daelim</b>	South Korea	49	↑8	www.daelim.co.kr
42	9017 <b>Acciona</b>	Spain	38	↓4	www.acciona.es
43	8549 <b>Doosan Heavy Industries &amp; Construction</b>	South Korea	47	↑4	www.doosanheavy.com
44	8436 <b>China Railway Erju</b>	China	41	↓3	www.crec.com.cn
45	8426 <b>NCC Group</b>	Sweden	44	↓1	www.ncc.se
46	8250 <b>GS E&amp;C</b>	South Korea	43	↓3	www.gsconstir.co.kr
47	8093 <b>SNC-Lavalin</b>	Canada	48	↑1	www.snc-lavalin.com
48	7921 <b>KBR</b>	US	40	↓8	www.kbr.com
49	7822 <b>JGC</b>	Japan	51	↑2	www.jgc.co.jp
50	7458 <b>Aker Solutions</b>	Norway	56	↑6	www.akersolutions.com
51	7303 <b>Daewoo E&amp;C</b>	South Korea	58	↑7	www.dwconst.co.kr
52	7056 <b>Isolux Corsan*</b>	Spain	82	↑30	www.isoluxcorsan.com
53	6999 <b>Haseko</b>	Japan	59	↑6	www.haseko.co.jp
54	6897 <b>Peab</b>	Sweden	53	↓1	www.peab.se

Sales Company (US\$ million)	Country	2012 Change	Website			
55	6751	<b>China Gezhouba</b>	China	50	U5	www.cggc.cn
56	6347	<b>Emcor Group</b>	US	66	U10	www.emcorgroup.com
57	6287	<b>VolkerWessels</b>	Netherlands	55	U2	www.volkerwessels.com
58	6266	<b>Laing O'Rourke</b>	UK	57	U1	www.laingorourke.com
59	6224	<b>Toda</b>	Japan	69	U10	www.toda.co.jp
60	6150	<b>Kinden</b>	Japan	64	U4	www.kinden.co.jp
61	6048	<b>YIT</b>	Finland	61	U	www.yit.fi
62	6001	<b>PCL Construction Group*</b>	Canada	73	U11	www.pcl.com
63	5816	<b>Petrofac</b>	UK	63	U	www.petrofac.com
64	5812	<b>Andrade Gutierrez</b>	Brazil	46	U18	www.agsa.com.br
65	5746	<b>Enka</b>	Turkey	75	U10	www.enka.com
66	5607	<b>Kandenko</b>	Japan	68	U2	www.kandenko.co.jp
67	5542	<b>Guangsha Construction Group*</b>	China	72	U5	www.guangshajhs.com
68	5485	<b>Chicago Bridge &amp; Iron</b>	US	80	U12	www.cbi.com
69	5420	<b>Spie</b>	France	65	U4	www.spie.eu
70	5343	<b>Carillion</b>	UK	54	U16	www.carillionplc.com
71	5179	<b>Obrascon Huarte Lain</b>	Spain	52	U19	www.ohl.es
72	4996	<b>Chiyoda</b>	Japan	113	U41	www.chiyoda-corp.com
73	4981	<b>Aveng</b>	South Africa	77	U4	www.aveng.co.za
74	4945	<b>Penta-Ocean Construction</b>	Japan	87	U13	www.penta-ocean.co.jp
75	4943	<b>Misawa Homes Holdings</b>	Japan	76	U1	www.misawa-hd.co.jp
76	4822	<b>Nippo</b>	Japan	78	U2	www.nippohodo.co.jp
77	4820	<b>Pulte Group</b>	US	88	U11	www.pulte.com
78	4674	<b>Orascom Construction Industries</b>	Egypt	71	U7	www.orascomci.com
79	4644	<b>Sacyr Vallehermoso</b>	Spain	70	U9	www.sacyr.es
80	4623	<b>Maeda Corporation</b>	Japan	90	U10	www.maeda.co.jp
81	4575	<b>Clark Construction*</b>	US	86	U5	www.clarkconstruction.com
82	4385	<b>Babcock International</b>	UK	79	U3	www.babcock.co.uk
83	4381	<b>Fayat Group</b>	France	83	U	www.fayat.com
84	4354	<b>D R Horton</b>	US	98	U14	www.drhorton.com
85	4313	<b>Murray &amp; Roberts</b>	South Africa	85	U	www.murrob.com
86	4292	<b>Sumitomo Mitsui Construction</b>	Japan	89	U3	www.smcon.co.jp
87	4245	<b>Brookfield Multiplex</b>	Australia	120	U33	www.brookfieldmultiplex.com
88	4129	<b>Alpine Bau</b>	Austria	74	U14	www.alpine.at
89	4111	<b>Tutor Perini</b>	US	95	U6	www.perini.com
90	4086	<b>Lennar</b>	US	118	U28	www.lennar.com
91	3960	<b>Boskalis Westminster</b>	Netherlands	91	U	www.boskalis.com
92	3782	<b>Whiting-Turner Contracting</b>	US	92	U	www.whiting-turner.com
93	3754	<b>Fujita</b>	Japan	108	U15	www.fujita.com
94	3639	<b>Nexity</b>	France	100	U6	www.nexity.fr
95	3624	<b>PanaHome</b>	Japan	96	U1	www.panahome.co.jp
96	3616	<b>ICA</b>	Mexico	104	U8	www.ica.com.mx
97	3598	<b>Ed Züblin</b>	Germany	94	U3	www.zueblin.de
98	3542	<b>McDermott International</b>	US	103	U5	www.mcdermott.com
99	3525	<b>Jaiprakash Associates</b>	India	116	U17	www.jilindia.com
100	3460	<b>Walsh Group</b>	US	102	U2	www.walshgroup.com
101	3415	<b>Foster Wheeler</b>	US	81	U20	www.fwc.com
102	3409	<b>Tecnicas Reunidas</b>	Spain	97	U5	www.tecnicasreunidas.es
103	3386	<b>Barratt Developments</b>	UK	111	U8	www.barratthomes.co.uk
104	3371	<b>Lotte Engineering &amp; Construction</b>	South Korea	105	U1	www.lotteapt.net
105	3366	<b>Camargo Corrêa*</b>	Brazil	93	U12	www.camargocorrêa.com.br
106	3313	<b>Veidekke</b>	Norway	114	U8	www.veidekke.no
107	3300	<b>Black &amp; Veatch</b>	US	150	U43	www.bv.com
108	3270	<b>Arcadis</b>	Netherlands	132	U24	www.arcadis-global.com
109	3265	<b>Kumagai Gumi</b>	Japan	112	U3	www.kumagaigumi.co.jp
110	3199	<b>Jan De Nul</b>	Belgium	125	U15	www.jandenu.com
111	3189	<b>NVR</b>	US	135	U24	www.nvrinc.com
112	3174	<b>MRV</b>	Brazil	184	U72	www.mrv.com.br
113	3171	<b>Nishimatsu Corporation</b>	Japan	109	U4	www.nishimatsu.co.jp

## Global challenges

### Industry profitability still weak

The 2013 league table of global contractors is based on revenues achieved in 2012. These came to US\$ 1,530 billion for the whole group, another record total.

The graph illustrates the revenues and profitability trend for the Top 100 going back a decade, and it is striking to note that there have always been annual turnover rises, even in the years of global recession. This year's total for the top 100 came to US\$ 1,292 billion, a +4% increase.

Although revenues have always improved, profitability in the industry has been more sensitive to the changing economic climate. The Top 100's margin peaked in 2006 at 6.2% operating profit. This was followed by a steep decline, driven first by the downturn in the US residential market and then the global recession that followed it. There was an improvement in 2010, as reported in the 2011 edition of the Top 200 study, but since then profits have flattened out. In 2012, the industry achieved an average margin of 4.4%, down 0.1 percentage points from 2011.

This fall in profitability and the relatively subdued +4% rise in revenues for the top 100 suggests business conditions are still tough for this group of companies, which could be indicative of the whole industry. With global construction output somewhere around the US\$ 7,500 billion mark, the top 100 represent about 17% of activity.

This statistic also reflects the fragmented nature of the global construction market. It is difficult to think of another sector where the top 100 companies have as little as a 17% market share and the top 200 claim about 20%. Indeed, the global number 1, CSCEC had revenues last year equivalent to only about 1.1% of global construction output. There are not many other businesses in the world where you could be market leader with a 1.1% share.



Most noticeable towards the top end of the rankings are the large Japanese groups. Sekisui House, Kajima, Obayashi, Taisei and Shimizu have all moved up since the 2012 league table and now sit within the top 20.

Indeed, this trend for the large Japanese companies is reflected all the way through this year's top 200. Only two of the 32 Japanese companies ranked in this year's league table have lost places since the 2012 league table was published, while an impressive 27 have

\* estimate

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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.

#### 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**

#### 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



#### Miguel Jurado Fernández

General Manager of FCC  
Construcción



#### Zeng Guang'an

President of Liugong



#### Simon Purchon

Business development  
director, Mobile Assets,  
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Sales Company (US\$ million)	Country	2012 Change	Website
114	3100	<b>Gilbane Building*</b>	US 84 U30 www.gilbaneco.com
115	3029	<b>Mostotrest</b>	Russia 107 U8 www.mostotrest.ru
116	2989	<b>Astaldi</b>	Italy 117 U1 www.astaldi.com
117	2983	<b>Morgan Sindall</b>	UK 101 U16 www.morgansindall.co.uk
118	2979	<b>Heijmans</b>	Netherlands 110 U8 www.heijmans.nl
119	2975	<b>Porr Group</b>	Austria 119 U www.porr.at
120	2972	<b>RZD Stroy*</b>	Russia 165 U45 www.rzdstroy.ru
121	2959	<b>Kier Group</b>	UK 106 U15 www.kier.co.uk
122	2947	<b>Aecon Group</b>	Canada 126 U4 www.aecon.com
123	2942	<b>Taylor Wimpey</b>	UK 127 U4 www.taylorwimpey.com
124	2914	<b>Lemminkäinen</b>	Finland 115 U9 www.lemminkainen.com
125	2883	<b>Mota-Engil</b>	Portugal 121 U4 www.mota-engil.pt
126	2876	<b>Implenia</b>	Switzerland 130 U4 www.implenia.com
127	2875	<b>OAS*</b>	Brazil 133 U6 www.oas.com.br
128	2864	<b>Toyo Engineering (TEC)</b>	Japan 167 U39 www.toyo-eng.co.jp
129	2864	<b>Toyo Construction</b>	Japan NEW www.toyo-const.co.jp
130	2862	<b>Tokyu Construction</b>	Japan 128 U2 www.const.tokyu.com
131	2854	<b>Interserve</b>	UK 124 U7 www.interserveplc.co.uk
132	2828	<b>Impregilo Group</b>	Italy 131 U1 www.impregilo.it
133	2787	<b>Sigdo Koppers</b>	Chile 155 U22 www.sigdokoppers.cl
134	2744	<b>Maire Tecnimont</b>	Italy 99 U35 www.mairetecnimont.it
135	2738	<b>Besix</b>	Belgium 138 U3 www.besix.com
136	2727	<b>TBI Holdings BV</b>	Netherlands 122 U14 www.tbi.nl
137	2720	<b>Glavstroy*</b>	Russia 136 U1 www.glavstroy.ru
138	2670	<b>Maeda Road Construction</b>	Japan 139 U1 www.maedaroad.co.jp
139	2560	<b>Lanco Infratech</b>	India 154 U15 www.lancogroup.com
140	2548	<b>China State Construction International Holding</b>	Hong Kong 157 U17 www.csci.com.hk
141	2509	<b>Persimmon</b>	UK 143 U2 www.persimmonhomes.com
142	2478	<b>Hazama Ando</b>	Japan 149 U7 www.hazama.co.jp
143	2470	<b>M.A.Mortenson</b>	US 142 U1 www.mortenson.com
144	2461	<b>Okumura Corporation</b>	Japan 151 U7 www.okumuragumi.co.jp
145	2461	<b>DEME</b>	Belgium 144 U1 www.deme.be
146	2440	<b>Compagnie D'Entreprises CFE SA</b>	Belgium 140 U6 www.cfe.be
147	2380	<b>McCarthy Building</b>	US 147 U www.mccarthy.com
148	2375	<b>China Petroleum Engineering &amp; Construction</b>	China 129 U19 www.cnpc.com.cn/cpecc/
149	2330	<b>Hensel Phelps</b>	US 141 U8 www.henselphelps.com
150	2320	<b>J.E. Dunn Group</b>	US 169 U19 www.jedunn.com
151	2313	<b>Salini Costruttori*</b>	Italy 166 U15 www.salini.it
152	2271	<b>Comsa EMTE</b>	Spain 123 U29 www.comsaemte.com
153	2264	<b>Tekfen Holding</b>	Turkey 174 U21 www.tekfen.com.tr
154	2264	<b>Hanjin Heavy Industries</b>	South Korea 137 U17 www.hanjinsc.com
155	2207	<b>Dongbu</b>	South Korea 156 U1 http://dbcon.dongbu.co.kr
156	2192	<b>Galliford Try</b>	UK 159 U3 www.gallifordtry.plc.uk
157	2187	<b>Homex</b>	Mexico 188 U31 www.homex.com.mx
158	2185	<b>Salfacorp</b>	Chile 177 U19 www.salfacorp.com
159	2180	<b>WBHO</b>	South Africa 160 U1 www.wbho.co.za
160	2154	<b>Van Oord</b>	Netherlands 146 U14 www.vanoord.com
161	2137	<b>Punj Lloyd</b>	India 153 U8 www.punjilloyd.com
162	2083	<b>Granite Construction</b>	US 161 U1 www.graniteconstruction.com
163	2056	<b>Max Boegl</b>	Germany 152 U11 www.max-boegl.de
164	2054	<b>CTCI</b>	Taiwan 173 U9 www.ctci.com.tw
165	2024	<b>Gafisa</b>	Brazil 189 U24 www.gafisa.com.br
166	2016	<b>Toa</b>	Japan 194 U28 www.toa-const.co.jp
167	2005	<b>Techint Engineering &amp; Construction*</b>	Italy 164 U3 www.techint.it
168	2000	<b>DPR Construction</b>	US NEW www.dpr.com
169	1968	<b>LSR</b>	Russia 186 U17 www.lsrgroup.ru
170	1920	<b>Brasfield &amp; Gorrie</b>	US 196 U26 www.brasfieldgorrie.com
171	1920	<b>Keller Group</b>	UK 179 U8 www.keller.co.uk
172	1883	<b>Toll Brothers</b>	US NEW www.tollbrothers.com

\* = estimate

improved their standings, and there are two new entries at the foot of the table.

Other national groups with significantly more gainers than fallers include the US, South Korean and Brazilian contractors. On the downside, many European countries saw their contractors lose more places than they gained, with the Spanish being particularly notable with eight out of the 10 companies listed losing ground. Similarly, seven out of nine dutch contractors lost places.

It is not a great leap to say that the fortunes of the various national groups of contractors seem closely linked to the ups and downs of their various domestic construction markets. Japanese contractors have undoubtedly benefited from reconstruction work following the 2011 earthquake and tsunami, while in the US the general market rebound is clearly having a positive effect.

Data from sources such as the US Census Bureau show the residential market is bouncing back the strongest, and again this is reflected in the fortunes of the country's housebuilders. From the highs of 2005 and 2006, this group of construction companies has had a torrid time starting with the sub-prime mortgage crisis that triggered the global recession.

However, they are finally seeing an improvement in revenues and are improving their standings in the Top 200 as a result. The country's largest housebuilder, Pulte Group was up 11 places in this year's rankings to no. 77. Other gainers in the same field include D.R. Horton – up 14 places to no. 98 and Lennar – up 28 places to no.90.

However, it is still a far cry from the height of the US residential construction boom in the middle of the last decade. The 2006 edition of the Top 200 league table, for example, saw Pulte ranked no.9 globally, D.R Horton no.10 and Lennar no.12.

Elsewhere in the Top 200, there were good gains for some of Japan's mid-sized contractors. Chiyoda, Penta-Ocean, TEC, Toa, Takamatsu and Nippon Road all saw double-digit gains. In addition, the general rise of Brazilian contractors was reflected in the remarkable 72-place gain for MRV, the most improved contractor in this year's Top 200. It is also worth noting that Odebrecht moved up seven places last year to no. 32, cementing its place as Latin America's largest construction company by a significant margin.

There were 14 new companies in this year's Top 200. The highest placed was Japan's Toyo Construction at no. 129, a company which just missed-out on a place in the rankings last year. However, most of the new additions were further down the league table, with eight in the last ten places. As with Toyo Construction, many of these are companies that were on the fringes of the Top 200 last year, and which have come in and out of the rankings over the last decade or so.

## Next year?

With the US construction market continuing to recover and the Japanese economy benefiting from 'Abenomics' stimulus measures, the 2014 edition of the Top 200 could see further improvements from construction companies in these two countries. By the same argument, the lack of growth in Europe could mean more stagnation for the region's contractors.

But the movements of the major Chinese groups will be perhaps the most closely watched. These should give an indication of the health of the market and the impact of the fiscal tightening measures that have been seen so far this year.

It seems most likely that a Chinese contractor will sit at the top of the league table next year, and given the gap to Vinci, they could occupy all three top places. It is difficult to see how in the current global market situation things could be any other way. ➤

# Analysis by country

Which country's contractors are the biggest and most profitable?

Country	No. of companies	New	Up	Down	Same	Total Sales (US\$ mill.)	% of Total	Average Sales (US\$ mill.)	Average Operating Profit Margin (US\$ mill.)	Average Headcount	Average Sales/Employee (US\$)	
China	11	-	1	7	3	362880	23.7%	32989	1430	3.63%	125085	\$285,677
Japan	32	2	27	2	1	228756	15.0%	7149	236	3.38%	8982	\$846,649
US	30	3	15	9	3	183856	12.0%	6129	348	5.02%	20493	\$314,174
France	7	-	2	2	3	125173	8.2%	17882	1492	7.41%	63419	\$281,965
Spain	10	-	2	8	-	115138	7.5%	11514	347	2.62%	43981	\$273,050
South Korea	11	2	7	2	-	66319	4.3%	6029	203	3.22%	7365	\$870,485
UK	15	-	6	7	2	60975	4.0%	4065	184	4.52%	16567	\$251,437
Germany	6	1	2	3	-	52797	3.5%	8800	240	1.95%	34149	\$299,437
Sweden	4	-	1	3	-	36206	2.4%	9051	275	3.04%	25201	\$359,171
Australia	3	-	2	1	-	35843	2.3%	11948	383	3.20%	29765	\$401,406
Netherlands	9	-	1	7	1	34253	2.2%	3806	129	3.38%	6789	\$575,798
Italy	6	-	2	4	-	30061	2.0%	5010	363	6.48%	15689	\$357,655
Brazil	7	-	5	2	-	30026	2.0%	4289	785	12.14%	14750	\$290,808
Austria	4	-	-	3	1	25644	1.7%	6411	41	0.57%	24426	\$401,406
India	5	-	3	2	-	19992	1.3%	3998	452	11.30%	3908	\$627,209
Canada	4	-	4	-	-	18897	1.2%	4724	299	5.42%	13743	\$343,772
Norway	3	1	2	-	-	12399	0.8%	4133	207	5.01%	10428	\$396,343
South Africa	3	-	2	-	1	11474	0.8%	3825	16	0.42%	17285	\$221,278
Belgium	4	-	2	2	-	10837	0.7%	2709	181	6.69%	8697	\$321,858
Russia	4	-	2	2	-	10689	0.7%	2672	190	7.15%	7306	\$365,767
Finland	2	-	-	1	1	8963	0.6%	4481	174	3.88%	16119	\$278,020
Turkey	2	-	2	-	-	8010	0.5%	4005	357	8.91%	7972	\$502,440
Mexico	3	1	2	-	-	7331	0.5%	2444	427	17.47%	7432	\$328,788
Egypt	2	-	-	2	-	6275	0.4%	3137	913	19.54%	12953	\$242,220
Greece	1	1	-	-	-	1584	0.1%	1584	116	7.32%	12436	\$127,408
Others	12	3	8	1	-	25417	1.7%	2118	-	-	-	-
<b>ALL</b>	<b>200</b>	<b>14</b>	<b>100</b>	<b>70</b>	<b>16</b>	<b>1,529,795</b>	<b>100.0%</b>	<b>7649</b>	<b>357</b>	<b>4.30%</b>	<b>23,899</b>	

Despite falling revenues for many Chinese contractors last year, robust growth by the three biggest players meant the country's construction companies claimed a slightly increased slice of the top 200's revenues last year – 23.7%, compared to 23.2% in the 2012 edition (based on 2011 figures).

Meanwhile a surge for Japanese contractors has seen their share of the Top 200's revenues move up from 14.2% in last year's study to 15.0% this year. US companies in the Top 200 meanwhile were almost unmoved with a 12.0% share this year, compared to 12.1% last year.

Five years ago in the 2008 edition of the Top 200, US contractors enjoyed the biggest slice, with a 19.9% share. They were followed by the Japanese (15.5%) and French (9.9%). Total revenues for China's contractors came to 9.7% of the total for the Top 200, putting this national group in fourth place, which emphasises how fast they have grown as companies.

## Global growth

Total revenues for the Top 200 came to US\$ 1,529 billion in this year's study, a +3.1% increase on last year's total of US\$ 1,483 billion. This meant the average size of a Top 200 company increased from US\$ 7.41 billion to US\$ 7.65 billion in revenue terms.

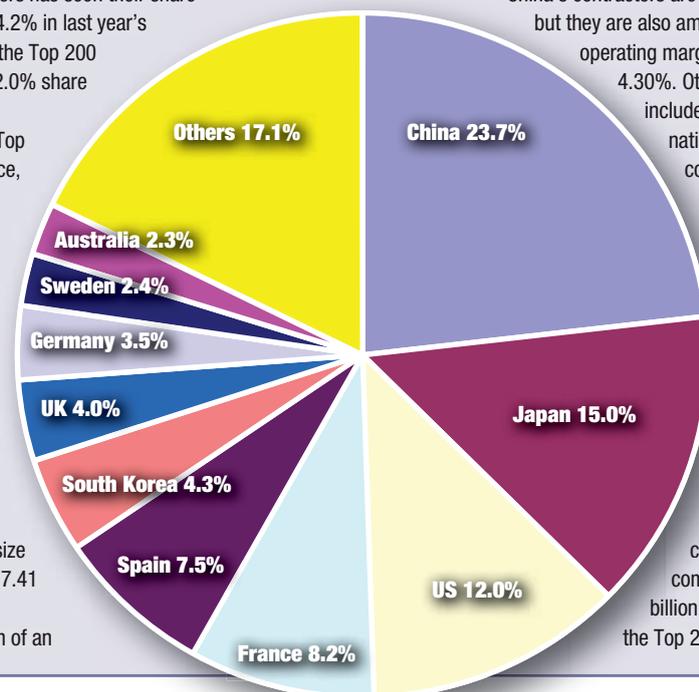
However, this was achieved without much of an

increase in headcount. Figures on employee numbers show that across the Top 200, the average company now employs 23,899 staff – only a +0.6% increase on the figure of 23,762 people per company from last year's analysis. This implies total employment among the top 200 of about 4.78 million staff.

China's contractors are the largest in revenue and employment terms, but they are also among the least profitable in the Top 200, with an operating margin of just 3.63%, compared to the average of 4.30%. Other under-performers in terms of profitability include the Japanese, South Korean and Australian national groups, along with most of the European contractors.

The more successful national groups on this basis are the US, Brazilian, Indian, Mexican and Egyptian contractors, while other emerging markets such as Turkey and Russia also seem to deliver healthy profits to their nation's largest construction companies.

About 75% of the companies listed in the Top 200 are from developed markets and they account for about 70% of the revenues. Of the remaining 50 or so, 11 are Chinese, leaving some 40 other emerging market contractors. These tend to be the smaller companies. They have total revenues of US\$ 119 billion – just under US\$ 3 billion each, compared to the Top 200 average of US\$ 7.65 billion.





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# NEWS REPORT

## The global top 200

Sales Company (US\$ million)	Country	2012 Change	Website		
173	1878	<b>Takamatsu</b>	Japan	191 ↑18	www.takamatsu-const.co.jp
174	1870	<b>Galvão Engenharia*</b>	Brazil	183 ↑9	www.queirozgalvao.com
175	1869	<b>Budimex SA</b>	Poland	176 ↑1	www.budimex.com.pl
176	1867	<b>ISG</b>	UK	172 ↑4	www.isgplc.com
177	1855	<b>Graham Construction*</b>	Canada	182 ↑5	www.graham.ca
178	1853	<b>Swietelsky</b>	Austria	170 ↑8	www.swietelsky.at
179	1838	<b>JM</b>	Sweden	178 ↑1	www.jm.se
180	1781	<b>Nippon Road</b>	Japan	199 ↑19	www.nipponroad.co.jp
181	1778	<b>Teixeira Duarte</b>	Portugal	NEW	www.tduarte.pt
182	1749	<b>Halla E&amp;C</b>	South Korea	NEW	www.halla.co.kr
183	1740	<b>Wates Group</b>	UK	185 ↑2	www.wates.co.uk
184	1728	<b>Bauer</b>	Germany	197 ↑13	www.bauer.de
185	1700	<b>Austin Industries*</b>	US	163 ↑22	www.austin-ind.com
186	1694	<b>Strukton Groep</b>	Netherlands	180 ↑6	www.strukton.com
187	1681	<b>MT Højgaard</b>	Denmark	192 ↑5	www.mthojgaard.dk
188	1671	<b>Goldbeckbau</b>	Germany	NEW	www.goldbeckbau.de
189	1666	<b>Ballast Nedam</b>	Netherlands	171 ↑18	www.ballast-nedam.com
190	1642	<b>Africa Israel Investments</b>	Israel	193 ↑3	www.africa-israel.com
191	1628	<b>AF Gruppen</b>	Norway	NEW	www.afgruppen.no
192	1601	<b>Arab Contractors</b>	Egypt	148 ↑44	www.arabcont.com
193	1586	<b>Tekken Corporation</b>	Japan	NEW	www.tekken.co.jp
194	1584	<b>Ellaktor</b>	Greece	NEW	www.etae.com
195	1583	<b>Hindustan Construction Company (HCC)</b>	India	190 ↑5	www.hccindia.com
196	1573	<b>Shikun and Binui</b>	Israel	NEW	www.hch.co.il
197	1560	<b>KB Home</b>	US	NEW	www.kbhome.com
198	1541	<b>Arabtec Holding</b>	UAE	NEW	www.arabteconstruction.com
199	1529	<b>Ssangyoung E&amp;C</b>	South Korea	NEW	www.ssyenc.co.kr
200	1528	<b>OHL Mexico</b>	Mexico	NEW	www.ohlmexico.com.mx

\* = estimate

China may not be seeing the kind of year-on-year increases it enjoyed in the 2000's, but it is still one of the fastest growing construction markets in the world. It is also a market where it is difficult for foreign contractors to compete, so the relatively bright domestic picture, combined with a continued push into other countries around the world is likely to see the Chinese contractors continue to dominate the top end of the league table. It remains to be seen if the mid-sized Chinese players will stage a recovery in years to come and move back up the rankings. **iC**

## Methodology

How the league table is compiled

The Top 200 league table is a ranking of the world's largest construction companies, based on sales revenues in 2012 – either full or financial years, depending on individual accounting practices. It is compiled from a range of sources, including audited annual accounts, companies' own statements of revenues and information from reputable third parties. In some cases iC has estimated company revenues. The ranking is based on sales in US Dollars and the exchange rates were average figures for 2012.

While every care is taken to ensure information in the Top 200 league table is accurate, iC cannot be held responsible for any inaccuracies or errors. If you feel your company should be included in the league table, please contact iC's editor, Chris Sleight at [chris.sleight@khl.com](mailto:chris.sleight@khl.com)

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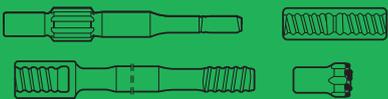
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# Strong momentum

The need for new transport networks to close the huge infrastructure gap Southern Africa is driving investment in the region's construction markets. **Scott Hazelton** reports.

**E**conomic growth in sub-Saharan Africa should average at least +5% this year and in 2014 – the best performance since the global downturn began in 2008, and second only to Asia for the best regional growth in the world.

South Africa, due to its strong trade links to the Eurozone, is an outlier in the region's high growth momentum, but in total 11 of the world's fastest growing economies during the next five years will be African, according to the International Monetary Fund (IMF).

Investors are responding to the opportunity with strong inflows to the continent, especially south of the Sahara, while the African Development Bank (AfDB) is readying an ambitious infrastructure bond program to boost African economies.

The proposed programme aims to raise up to US\$ 40 billion for infrastructure development, with about half of the amount to be drawn from the considerable reserves now held by central banks around the continent.

If it works as expected, the programme will make AfDB Africa's largest multilateral financier. To put it in perspective, the projected US\$ 40 billion would compare to the US\$ 19 billion dispersed this year through the AfDB and World Bank combined.

Assuming that the projects financed are well chosen and executed capably and honestly, the

continent would receive a tremendous direct and indirect economic boost, but it would still only partially close the region's huge infrastructure gap.

Indeed, Africa may need to invest over US\$ 50 billion in the next decade on additional rail infrastructure alone. This would provide 4,000 km of rail to improve access to the continent's mineral resources.

While there are extensive coal, iron and manganese deposits in West Africa and Mozambique, they are expensive to reach and develop due to lack of infrastructure. Mozambique alone could see upwards of US\$ 20 billion in rail and port infrastructure as its coal reserves are desired by the large and rapidly growing nearby markets in Asia, especially India.

Roads are also an issue. Mozambique has about 30,000 km of road, with the main arteries surfaced. However, secondary roads tend to be poorly maintained and can become impassable in the rainy season. With Chinese funding, the country has begun an infrastructure improvement programme that will include the construction of a ring road to connect critical highways in Mozambique to South Africa by 2014/15.

Investment in roads is widespread and vitally needed. Under its Vision 2030 programme, Kenya has committing to building and upgrading thousands of kilometres of roads. The initial

phase will see construction of the country's first eight-lane superhighway, a major link to the great Trans-African highway from Cape Town to Cairo and connecting Nairobi with Somalia and Ethiopia.

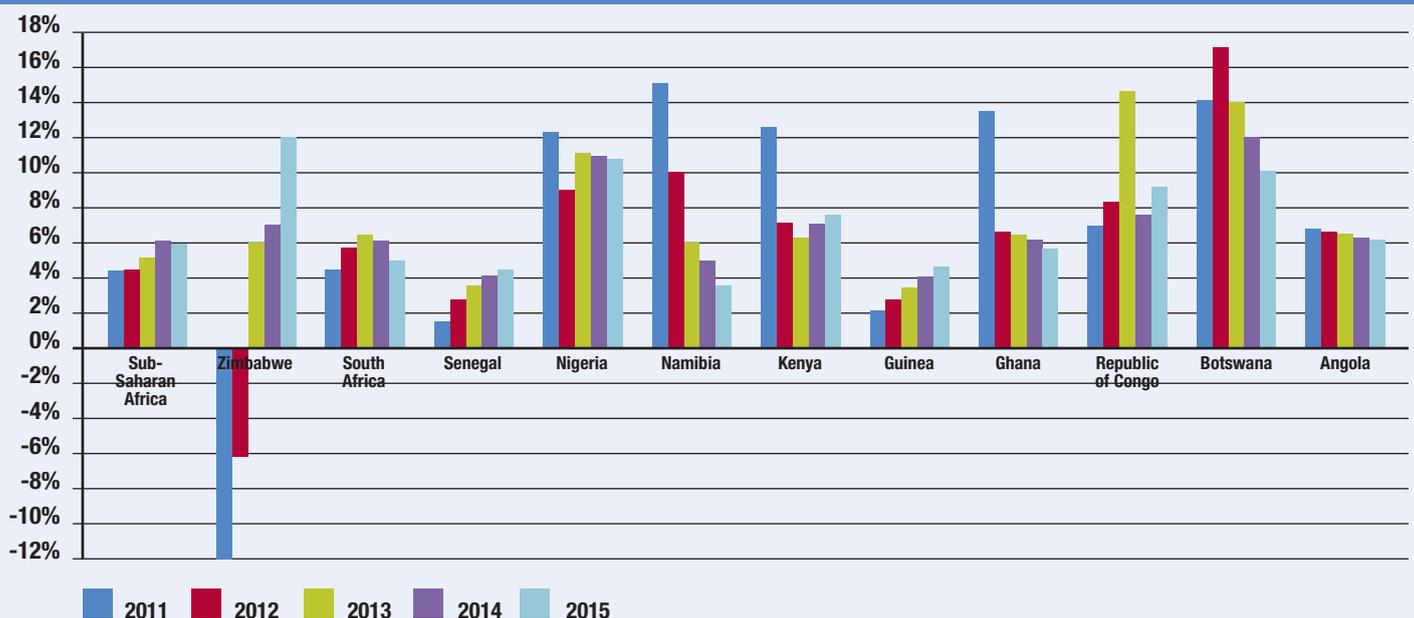
## Power shortages

Another critical infrastructure element is power, with most countries throughout Africa experiencing chronic shortages that disrupt industrial and commercial operations. Plans are being put in place to tackle this – Nigeria, for instance, intends to put 1 GW into the national electricity grid per year over the next decade, increasing total capacity by 10 GW, or about a +50% to +70% compared to the current reliable, as opposed to nominal, level of capacity.

While few details have been released, the plan is notable for two aspects. First, the focus will be largely on renewable sources, principally solar. Secondly, the investment is being made by a South Korean conglomerate, HQMC, pledging up to US\$ 30 billion.

The HQMC venture is structured as a build-operate-transfer contract, which would provide Nigerians with both jobs and technical training in early project phases, and eventually turn over full ownership and control of the technology to Nigerians.

## Growth in business fixed investment



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Uganda is also making additional investments in power generation, most recently contracting for the 600 MW Karuma hydropower dam, a US\$ 1.65 billion investment. Construction should begin before the end of 2013, and represents the most significant power generation project in Uganda, in tandem with the commissioning of the 250 MW Bujagali hydropower plant in 2012. The Karuma project is funded by China, which

remains the dominant source of investment funds in Southern Africa. But it is not universally popular. Botswana experienced such problems with a Chinese-contracted power plant that future infrastructure deals along these lines are unlikely.

Expansion of electricity generation at Morupule B, a US\$ 1.6 billion investment in four 150 MW coal-fired units, should have been up and running by the end of last year. However, it is not yet online and power cuts are affecting both business and citizens, impacting planned large investments in railways, roads and mining that are planned to link the country's large untapped coal resources with ports in Namibia and Mozambique.

One of the obstacles to investment in Africa, particularly in infrastructure projects, is the labyrinth of regulations and government agencies that need to be traversed. For investment to occur at sufficient rates to promote economic progress, countries must make the process more transparent.

Cameroon has taken the lesson, revising its investment code in a bid to attract more foreign investment. Many of the new provisions effectively end the distinction between domestic and foreign investors.

Zimbabwe represents the problem with other African economies, however. While the country was able to attract some domestic and foreign

investment following some market-reform measures in 2009, statistics show the interest has waned substantially since 2012.

One culprit is the aggressive implementation of the indigenisation programme that requires all foreign-owned companies to cede 51% shares to indigenous Zimbabweans. This was compounded by the threats of higher taxes, the possibility of outright nationalisation of businesses, and the revocation of previous government contracts.

Zimbabwe has vast natural resources that under the right investment climate could attract significant investor interest, but the country's inhospitable business environment and limited access to financing are obstacles.

### Private sector

Infrastructure spending is not the only growth engine, with private sector investment also offering significant opportunities in Southern Africa. However, the availability of quality data makes quantification difficult. As such, one needs to use other indicators, such as broad economic performance or fixed investment growth.

The opportunity for construction exists for companies willing to take some risk to provide the infrastructural foundation that will lead southern Africa on the long road to significant economic expansion



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# Branching out

After a tough few years, South African contractors are looking for growth from the rest of the continent as well as from the domestic market. **Gavin du Venage** reports.

It has been a grim few years for South African construction companies, battered by tough economic conditions and a price fixing scandal, but indications are that the situation could be about to improve.

Two years ago, contractors were struggling to survive the slump that followed the construction boom ahead of 2010's World Cup football tournament, and the industry was hit by a collusion investigation that threatened the survival of some of the sector's largest companies.

It turned out to be the industry's worst scandal in years and resulted in soured relations with its biggest client, the government, as well as taking up hundreds of hours of management time. Now, with all the skeletons out of the closet, fines paid and guilty companies admitting anti-competitive behaviour, the issue is drawing to a close.

A group of 15 contractors active in South Africa have agreed to pay fines totalling ZAR 1.46 billion (US\$ 145 million) for anti-competitive behaviour. The fines were agreed with South

**Piling work at Medupi coal plant, currently under construction**



Africa's Competition Commission under its Construction Fast Track Settlement Process, and the allegations of irregular conduct stretch back decades on contracts worth around ZAR 47 billion (US\$ 4.7 billion). The most recent transgressions were alleged to have occurred on the building of stadiums for the 2010 World Cup.

The issue also strained relations with the government to breaking point. As the single biggest buyer of construction services, the government felt that it was being ripped-off. In public, officials have expressed increasing levels of outrage as the level of price fixing became apparent.

"Private sector collusion and price-fixing cost the state many billions in previous infrastructure projects, including the 2010 World Cup stadia," Economic Development Minister Ebrahim Patel said in parliament.

While the size of the penalties has left the industry stunned, the agreements also point to closure. The uncertainty is almost over and the industry can begin to move in a more positive direction. As far as business performance is concerned, early indications suggest that construction business is improving.

CREDIT: ESKOM



**Contractor Geopile Africa uses Atlas Copco HB 2000 breakers to install piles in South Africa's Northern Cape for a solar power project. The country has a rapidly emerging solar energy industry.**

## REGIONAL REPORT: SOUTH AFRICA

Branching out

"It does not bode well for the industry when projects are not being signed off," Ms Dlamini said. "This is affecting growth because we depend on government to support industry." She added that industry leaders were keen to rebuild their relationship with government.

"This is something we need to talk to government about. The CEOs of the biggest companies want dialogue."

The industry was relatively insulated from the credit crisis of 2008 by the race to complete infrastructure for the 2010 World Cup. But as the jobs were signed off, companies found themselves sitting with excess capacity and dwindling new contracts.

Earnings at South Africa's biggest construction group, Aveng, fell -58% in the 12 months to June last year, reflecting industry-wide doldrums.



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"There has been a complete mistrust between the private sector and government," said Tumi Dlamini, executive director of the Masterbuilders of South Africa, the industry's representative body. "Hopefully now that the process is coming to an end, we will have finally won a measure of understanding between the two parties."

### Slow payment

The competition issue also made it difficult for the industry to take up its own issues with South Africa's government, including the slow implementation of contracts, and even tardier payment for work delivered.

Last year, for instance, contractor Sanyati closed the lid on its empty coffers and filed for bankruptcy after millions in outstanding payments for as many as 23 government contracts were not paid. More than 2,500 jobs were lost in the debacle. At the same time, promised projects are simply not happening.

## REGIONAL REPORT: SOUTH AFRICA

### Branching out

There are however signs of improvement. First National Bank (FNB) and the Bureau for Economic Research said that their latest construction confidence index had jumped from 36 index points in the last quarter of 2012 to 51 points in the first quarter of 2013. This was the highest reading of the index in four years. Sizwe Nxedlana, chief economist at FNB, said the surge was a result of restored profitability in the construction sector.

“Construction firms have been able to restore profitability following a prolonged period of intense margin pressure,” Mr Nxedlana said. “However, this could be constrained if construction activity growth continues at the slow pace seen in the first quarter of 2013.”

Ms Dlamini added that the numbers appear to reflect the mood on the ground, “We have not seen this kind of growth for a while now. We hope this will continue.”

### Large projects

Much of the hope is pinned on large state-funded projects. The ruling African National Congress is under pressure to improve economic growth and, especially, to create jobs – a quarter of the country’s working-age population are unemployed.

Last year, it announced an almost ZAR 4 trillion (US\$ 400 billion) infrastructure programme to be rolled out over the next two decades, with almost ZAR 850 billion (US\$ 85 billion) to be spent within the next three years. The projects will be split between various government departments and state-owned enterprises, such as logistics company Transnet and national



CREDIT CITY OF CAPE TOWN

electricity utility, Eskom.

The government will also spend ZAR 430 billion (US\$ 43 billion) to build schools, hospitals, clinics, dams, water and sanitation projects. The funds will also go towards expanding electricity networks and supplying electricity to over a million new homes, building more courtrooms and prisons and construct better bus, commuter rail and road links, according to Finance Minister Pravin Gordhan. These projects will mostly be carried out through municipalities and provincial authorities

The state utilities also have ambitious projects ahead. Transnet, for instance, wants to turn the old Durban airport on the country’s east coast into a new container facility, at a projected cost of ZAR 100 billion (US\$ 10 billion).

Exploratory drilling on the site by Transnet is already underway, and the first phase is expected to be completed by 2019. By 2036, it will have a 16-berth container terminal that can handle 9.6 million standard twenty-foot equivalent units (TEUs).

A project of this size and complexity will put South African companies to the test, which will offer opportunities for international companies, says Andrew Robinson, head of the Admiralty and Shipping department at Norton Rose Fulbright South Africa.

“There are not many people here with experience in this sort of thing,” said Mr Robinson. “It will require special skills, such as understanding how concrete and sea-water react to each other over long term. It will also involve a huge amount of excavation. So a lot of overseas companies are watching with interest, and some have already begun setting up offices here.”

He added that foreign entrants to the South African market will have a steep learning curve. By law, all government contracts require the winning bidder to include black equity partners. While local companies have adapted their operating models to include black participants, first time entrants to the market will have to figure their way through the process – a daunting prospect for many.

Another hurdle is the glacial pace at which these projects get signed off. “We hear a lot of talk but as yet these projects are not coming to fruition,” Ms Dlamini noted.

Funding is the biggest fence to be cleared, but private sector asset managers

## Old and new in Angola

A fleet of 13 cranes are put through their paces 24/7 in Lobito

**C**ontractor Sonamet owns a fleet of 13 Manitowoc crawler cranes that are challenged to work round the clock in Lobito, on the coast of Angola. The oldest model – the 4000 WV – dates back to 1967, and works alongside the newest 18000 from 2011.

Sonamet is a joint venture between Subsea 7, a seabed-to-surface engineering, construction and services contractor to the off-shore energy industry, and Sonangol, an Angolan hydrocarbon company,

The cranes lift loads of up to 550 tonnes for the assembly of oil platforms and other underwater/ offshore infrastructure. Conditions are tough, with the coastal location increasing the potential for rust build-up and the entire 80 ha site is almost completely covered in sand. On-site engineers, who were trained by Manitowoc Crane Care, perform routine maintenance and regular checks to ensure the sustained performance and longevity of the cranes.

Alexander Arsie, operations, yards and assets manager at Subsea 7, said, “We fabricate a lot of different and very large structures so we need adaptable machines that can be set up quickly and perform effectively. The cranes adapt well to the work. The older machines are put through their paces and manage to keep up with their younger, more modern colleagues.”

The 18000 is fitted with the MAX-ER capacity-enhancing attachment that increases its capacity to 750 tonnes, making it the most powerful crane on site. The smallest crawler is a 5500, which offers a 55 tonne capacity. Sonamet regularly uses the cranes in tandem or in combinations of up to four to carry out the largest lifts.







**Cape Town's Greenpoint stadium, under construction ahead of the 2010 World Cup**

stations and numerous renewable projects such as wind and solar farms. It is presently struggling to complete the Medupi power plant, the world's largest dry-cooled coal station, which is two years behind schedule.

Due to the lumbering progress on this, and a sister coal plant also underway, sceptics have poured doubt on Eskom's nuclear ambitions. But as the country's need for power grows, and environmental concerns make coal plants ever more contentious, nuclear is likely to be viewed as the best solution

### Outside South Africa

In the meantime, South African companies are looking further north; the continent is home to the six fastest growing economies in the world, and infrastructure spend is increasing rapidly.

"South African companies are setting up offices across the continent," says Michael Vincent, leader of the Strategy practice at Deloitte Consulting in Johannesburg. "They are spreading their risk and looking for new growth in the rest of Africa. Many countries to the north of here have outperformed the OECD economies by a wide margin."

Although Africa as a whole is a tough place in which to do business, local South African companies are running into operational constraints at home that are weighing on profitability. Union militancy and above-inflation wage increases, coupled with declining productivity, have impacted on the bottom line. "Companies are caught in the jaws of the crocodile – higher wages but lower productivity. This is largely absent in the rest of Africa," Mr Vincent concluded. **ic**

holding funds controlling ZAR 4.6 trillion (US\$ 460 billion) – almost five times the capital required – are in talks with the government to act as banker to the infrastructure programme.

The stunning success of the World Cup build, which saw five new stadia and a mass transit system put in place in the face of substantial international and local scepticism, suggests that once financing is in place, projects will go ahead.

Eskom, the electricity utility, is in the early stages of a long term process to double the country's power output. It needs to add nearly 40 GW to the country's grid, and plans five new nuclear

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## QUARRYING

The big payback

# The big payback

Quarry operators around the world are finding that investing in new equipment can deliver significant productivity and efficiency gains. **Chris Sleight** reports.

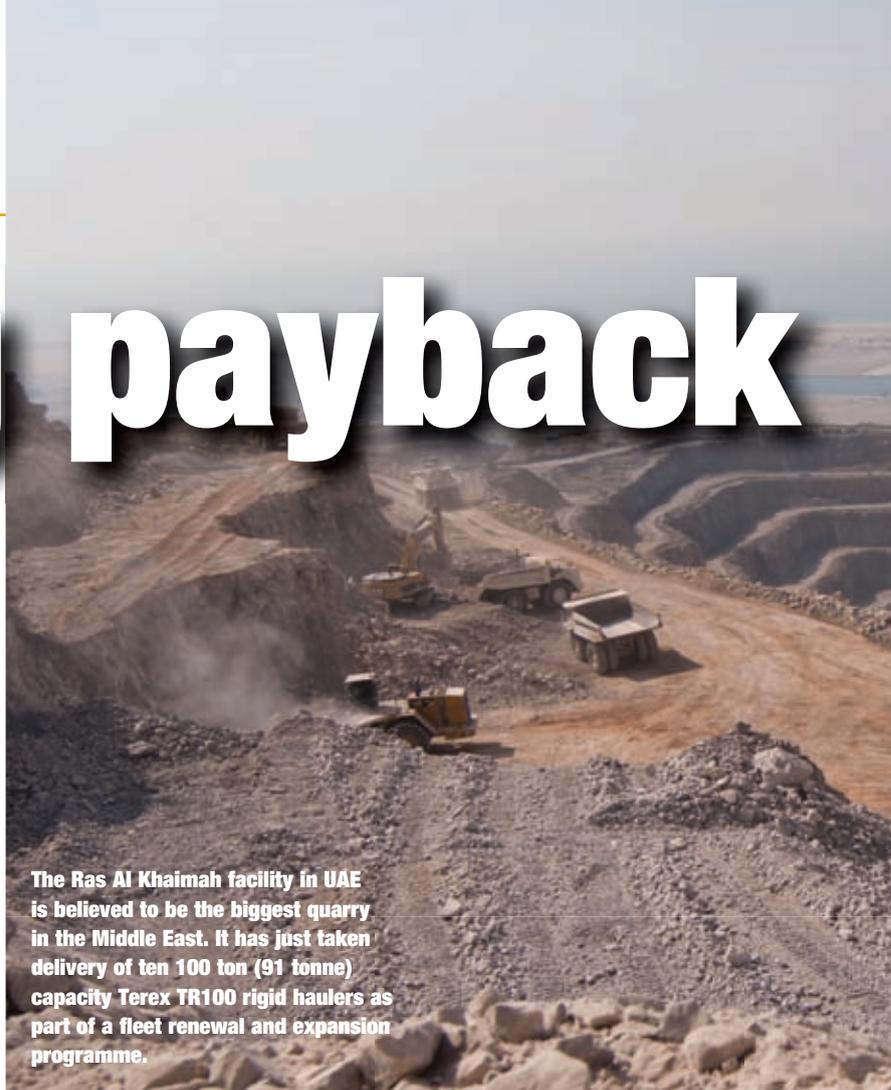
**T**erex has supplied ten 100 ton (91 tonne) capacity TR100 rigid dump trucks to work at the Ras Al Khaimah quarry, in the UAE, believed to be the largest limestone quarry in the Middle East.

Operated by a state-owned enterprise since it was opened in 1975, the quarry has a fleet of more than 250 machines, including 38 TR100s, plus 20 of the previous 3311 and 33100 models.

"We've got a big fleet of Terex trucks and that was a major factor in the decision to buy the new TR100s," said technical and operations manager Simon Turner. "The equipment was partly fleet expansion, along with an element of fleet renewal. We work 24/7, 365 days a year here and working hours on a machine can easily reach 7,000 hours per year."

The quarry reaches 800 m into the mountains behind Ras Al Khaimah, with more than 20 active benches and up to 30 km of quarry face. The lowest working area is 40 m above sea level and the highest is some 450 m above that. Using computer-aided design, geophysical drilling and laser profiling, the quarry team carries out blasting six days a week, with more than 120,000 tonnes of material being excavated each day.

Mr Turner took over running of the site last summer and has overhauled the working operation, with impressive results. The company has seen a +15% rise in efficiency and an even more



The Ras Al Khaimah facility in UAE is believed to be the biggest quarry in the Middle East. It has just taken delivery of ten 100 ton (91 tonne) capacity Terex TR100 rigid haulers as part of a fleet renewal and expansion programme.



An imminent launch promised from Terex Washing Systems (TWS) is the Aggresand, an all-in-one aggregate washing and screening plant, with sand processing capabilities, all on a modular chassis.



Vertex Excavating took delivery of one of the first Volvo EC380D excavators in North America to help it tackle demanding site conditions on a quarry in Canada's Pacific Northwest rain forest

impressive +30% rise in productivity, with hardly any additional machinery or personnel. Health and safety at the quarry has improved significantly.

"It is a continuous course of improvement. We've seen some big wins in terms of productivity, now the smaller things need to be assessed. This site is primarily about logistics, it's a load and haul site. We have put the plan in place, now we need to prove it.

"We've done a lot of time cycle analysis to see where improvements can be made. We're also looking at excessive truck idling and correct positioning for better efficiency. We look at everything from an efficiency point of view now," said Mr Turner.

Meanwhile Vancouver-based Vertex Excavating, a subcontractor to Lafarge on a 90 ha quarry in the heart of Canada's Pacific Northwest rain forest, has different challenges to contend with. With annual rainfall of 1.3 m or more, and even more water to deal with from melting snow on the area's



mountains, the terrain is hard to negotiate especially given that track gradients can be 20° or more.

“We are dealing with a lot of steep hills,” said Mike Pratchett, president of Vertex. “We also have to deal with almost two-mile (3.2 km) haul cycles and rain for 10 months of the year, resulting in muddy slippery slopes. You could say we have tough working conditions to contend with almost all year round.”

Vertex excavates clay and till at the quarry as well as clearing logs and over-burden, taking a role in waste management and working with the provincial and local authorities on water management and environmental issues.

The company has an all-Volvo fleet to tackle its work in these difficult conditions, with a pair of Volvo EC360B excavators, five Volvo A25D articulated dump trucks (ADTs) and a Tier 4-compliant Volvo EC380D crawler excavator on site.

The EC380D was one of the first delivered in North America. “When the machine arrived, we added a few additional accessories to it, such as the larger 60 in (1,524 mm) wide digging bucket, a hydraulic thumb and, because our contract calls for log clearing, we added the falling object protective structure (FOPS) to guard the cab from falling debris,” said Mr Patchett. “It’s a

tremendous machine, plenty of power, great stability, superior lighting and a cab full of creature comforts. Even in this till and clay that has been compacted for centuries, the excavator has allowed us to improve our cycle times.”

He is also a fan of the Volvo ADTs, something that clearly runs in the family. “My dad started his business using Volvo machines, and I’ve been around them all my working life. When it came time to buy my own trucks, I wouldn’t consider any other brand. Because of the efficiency of the transmission retarders and exhaust brakes, we haven’t had to replace a single brake pad,” said Mr Patchett.

Further up the weight classes, January saw Polish aggregates producer DSS Group acquire a new 70 tonne class Hitachi ZX670LC-5 for its quarry at Pilawa Górna in Lower Silesia from local dealer Tona. The DSS Group – owned by Dolnośląskie >



**Polish quarry operator DSS Group has bought a 70 tonne class Hitachi ZX670LC-5 with the aim of reducing the cost per tonne of its Pilawa Górna quarry.**

## QUARRYING

### The big payback

**Business expansion and a drive for greater efficiency prompted GD Harries & Sons to buy two new Case excavators and two loaders for its quarry operations in Narberth in West Wales, UK.**

Surowce Skalne – is believed to be Poland's largest producer of aggregates. The facility can produce 5 million tonnes per year in grades suitable for both road and rail projects. Bulk deliveries are made by rail in a 60 km radius of the site, and the quarry's location near the E67 highway also allows for efficient road transport of materials. "This is the first Hitachi that I've worked with," said quarry manager Janusz Rydz, "but from what I've heard in the market, Zaxis excavators are very reliable and durable."

He continued, "We hope that the ZX670LC-5 will enhance the level of productivity on this site. Our aim is to reduce the cost of every tonne of stone extracted. To do this, we are renewing our fleet of construction machinery and in this case we believe that we have found the best solution."

Machine operator Boleslaw Gazda estimates the ZX670LC-5 excavates and loads some 600 to 700 tonnes of materials per hour, depending on the size of the rocks. "The Hitachi provides a very stable platform – even working in the challenging conditions of this quarry – and the loading cycle is good," he said.

**W.S. Tyler has launched a 4 ft (1.22 m) wide version of its F-Class vibrating screen, expanding the lower end-of the range. The double eccentric provides consistent forces, which helps reduce blinding and pegging, even when screening sticky material.**



"It's also fast and precise thanks to the simplicity and efficiency of the hydraulic system."

Meanwhile in the UK, quarry operator and civil engineering contractor GD Harries & Sons is expanding its business with the addition of four new Case machines, supplied by local dealer Riverlea. Based near Narberth in West Wales, UK, the last 18 months has seen Harries acquire four granite and two limestone quarries. It also runs three concrete production plants and three asphalt facilities, and has expanded its interests into road surfacing and other civil engineering contracting operations alongside its quarries.

The two new two CX350C crawler excavators, 1021F wheeled loader and 821F loader replace existing machines as part of fleet renewal plan. The 35 tonne CX350C excavators are now the largest machines in the Harries fleet and, along with the two wheeled loaders, will contribute to an increase in production levels within the quarry operations.

"We did price other equipment but Riverlea was able to put together the best deal for us in terms of price and quality," said Harries business manager Janet Phillips.

## American return

Bell establishes US distribution & support

**B**ell Equipment is returning to the US market after more than a decade, offering customers the choice of another supplier for ADTs. The company is currently setting up a distribution network to handle sales of its existing D-Series and forthcoming E-Series trucks.

The return is linked to the end of a licensing agreement with John Deere, which saw Bell providing the truck technology and Deere manufacturing and distributing machines under its own brand. Deere has now developed its own range of ADTs.

Bell's push into the US market will be headed by a new sales company, Bell Trucks America (BTA), in Houston Texas, which has already appointed several dealers in the US. This company is a joint venture between Bell and other investors, and it will be supported by a Bell wholly-owned subsidiary, Bell Equipment North America (BENA) for factory sales, after-sales support and technical advice. This will extend to Canada, outside BTA's territory.

BENA is headed by Neville Paynter, who previously ran Bell Equipment's operations in the UK. "The Bell brand is founded on providing strong reliable machines, backed by strong reliable support. We believe we have the right team and business model in place to deliver these qualities to the North American market," he said.



**XCMG has supplied a 250 kW LW800K wheeled loader to a quarry site in the Gobi desert, where the company says it continues to perform and provide impressive fuel efficiency despite temperatures that can reach 50° C.**

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**People. Passion. Performance.**

**New BBC 34 DSI rock drills from Atlas Copco are delivering a 5 db(A) reduction in noise for quarries in Portugal's Parque Natural das Serras de Aire e Candeeiros national park.**

"We do have our own maintenance staff to keep the machines running, but Riverlea has always been there to look after us when we need them," she added

Supplied in standard specification, the equipment is already delivering a boost in productivity for the company. With a continued growth in demand for aggregate throughout the region, Ms Phillips says the company will be looking for additional machinery before long.

It is often the case that new machines come with new features that can help productivity and safety. Doosan for example has launched several new features on its DA30 and DA40 ADTs aimed at doing just this.

A levelling meter uses rotation sensors installed on the front and body of the truck to tell the driver via clear graphical readouts whether or not it is safe to drive forward and to stop if there is a danger of turning the machine over.

On the productivity side, a new payload and cycle count meter uses load sensors to provide an immediate readout on the cab's control monitor of the payload with an accuracy of +/- 5%. The load is registered and counted in the vehicle control unit. Double counting is avoided because the system will not log another load until the truck has travelled more than 50 m or after a timeout of 3 minutes.

The data can be downloaded to a USB memory stick or sent as an attachment. It is in Wordpad format and can be identified and tracked by assigning it with a serial number.

Meanwhile the new Economy mode on the trucks is designed to cut fuel costs by controlling engine speed. Doosan says the system comes into its own on long haul roads where a new



## Quarry workhorse

New loader for lesser regulated markets

**T**he new Cat 986H wheeled loader has been designed for quarry applications, and it is a model made purely for lesser regulated markets, outside of Europe, Japan and the US. With bucket capacities ranging from 5.3 to 6.1 m<sup>3</sup>, the 305 kW machine

features a power train with proven Cat components, a load-sensing hydraulic system, heavy duty frames and loader linkage, and a safe, comfortable operator station.

Using solid steel lift arms designed to absorb loading stress, the 986H Z-bar-type loader linkage generates powerful digging and lifting forces and provides excellent visibility to the bucket cutting edge and surrounding work area. Lift arms are available in both standard-lift and high-lift configurations to accommodate a range of haul trucks.

Equipped with standard linkage, the 986H can load 38.6 tonne capacity Cat 770G trucks in four passes. With high-lift linkage, it can five-pass load the 47.7 tonne 772G and six-pass load the 56 tonne 773G.



powertrain and electronic control allows the engine to run at the best point in terms of power and torque.

### Quiet drilling

And there can be improvements in other important areas such as noise and environmental performance. For example, Atlas Copco has supplied limestone quarries in the Parque Natural das Serras de Aire e Candeeiros national park in Portugal with >

## QUARRYING

The big payback

**BELOW: RDS has launched the LOADMASTER a100 on-board weighing system, which it describes the new industry benchmark in terms of accuracy and ease of use in difficult conditions and terrains. The CAN-based system uses cutting edge sensor technology and signal processing techniques providing precise and consistent weight information.**



BBC 34 DSI pneumatic rock drills, which are delivering a 5 db(a) noise reduction compared to the older Atlas Copco BBD 94 DSI units. This has been a key factor in the park, which is a major tourist attraction, as well as an urban environment.

“Field tests showed that the BBC 34 DSI provides the same high penetration rate as the BBD 94 DSI, but with a noise reduction of 5 dB(A), and this is experienced by the human ear as a 50% lower noise level,” explained Torres Marques, business line manager at Atlas Copco Portugal.

The BBC 34 DSI pneumatic rock drill has a piston diameter of 80 mm and 70 mm stroke. It delivers high impact energy per

**Finnish crushing contractor Sundvik was one of the first companies to take delivery of Metso's new C120 jaw crusher following its launch in 2011. It has since clocked-up 4,000 hours of production.**



**ABOVE: Levelling meters, payload weighing systems and cycle counting are all features of Doosan's new large ADT models.**

blow and is suited to medium to hard rock. The large piston diameter enables it to maintain high efficiency even at low air pressure, and maintenance intervals are longer than for the BBD 94 DSI.

“Our customers no longer have concerns regarding noise levels disturbing the local residents,” said Mr Marques.

### Tough crushing

The processing side of the quarrying industry also has potential to provide cost savings with correctly specified new machines. Finnish crushing contractor AB R&S Sundvik was one of the first in the world to buy the Metso's C120 jaw crusher when it was launched in 2011. The unit has since clocked-up over 4,000 working hours and crushed some 500,000 tonnes of material.

“The long and well-designed cavity combined with a large feed opening seems to guarantee steady and high productivity. Within our operations, we have never aimed for short, high peaks but a steady, continuous production that really makes for visible results,” said Stefan Sundvik, responsible for the contractor's crushing operations. >







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## QUARRYING

The big payback



**Major Wire says its Double-Weave screening media, which is constructed of two, side-by-side, light-gauge wires, outperforms heavy-gauge single-strand wire screens and perforated plates in high impact applications because it is less susceptible to breakages.**

“The C120 cavity is also very well suited to crushing fragmented feed materials. Even difficult feed doesn’t block the cavity. Therefore, we hardly need to use our hammer,” he added.

Sundvik’s three-stage portable crushing plant is kept running for two 8-hour shifts per day. The C120 jaw is usually operated with a 100 to 150 mm closed side setting, resulting in a capacity of 250 to 300 tonnes per hour.

The Boda quarry near the small town of Vrigstad, Sweden, meanwhile features particularly hard granite, with a compressive strength of over 300 MPa in places. Crushing specialist TJ Gräv chose a Kleemann Mobicat MC 120 Z mobile jaw crusher as the primary unit with a Mobicone MCO 11 S mobile cone crusher for downstream work.

The primary stage reduces the feed material, which can be up to 1 m long, down to a 0 to 200 mm stream. The cone crusher,

followed by a three-way screening system then produces 0 to 8 mm, 8 to 14 mm and 14 to 22 mm products. The plant is producing 1,000 tonnes of material per day.

Tomas Johansson, owner of TJ Gräv AB, said the Kleemann machines were well-suited to the application. “Both plant units have a diesel-electric drive system, which has a very favourable effect on fuel consumption. Not only that, they are built very sturdily,” he said.

It is also significant that TJ Gräv chose mobile crushing and screening equipment, which is a clear trend around the world due to the flexibility such machines can offer.

### Mobile equipment

Hamilton Aggregate was founded in 2006 at Bonds quarry, located in Clinton, Arkansas, US. From the outset the company opted for mobile crushing and screening equipment that could be moved to the face to crush material without the need for hauling it, and which can be transferred between quarries.

Today the set-up consists of a Sandvik mobile QJ341 jaw crusher, a QE440 scalper, a QA450 triple deck screener and an Extec X44 cone crusher. Extec is now part of Sandvik.

As company owner, Edward Hamilton said, “These mobiles are quality machines. They provide us with lower operating costs and high production for their size.”

A further quarry, Greers Ferry, operated by the company in Higden, Arkansas, was acquired to supply aggregates to a nearby bridge project.

The constant steady supply required from the Greer Ferry quarry emphasises the need for a reliable aftermarket support.

“The equipment has proved to be highly reliable, but after discussing our

**A Kleemann Mobicat MC 120 Z primary jaw crusher tackles 300 MPa Swedish granite at the Boda quarry near Vrigstad.**



## QUARRYING

The big payback



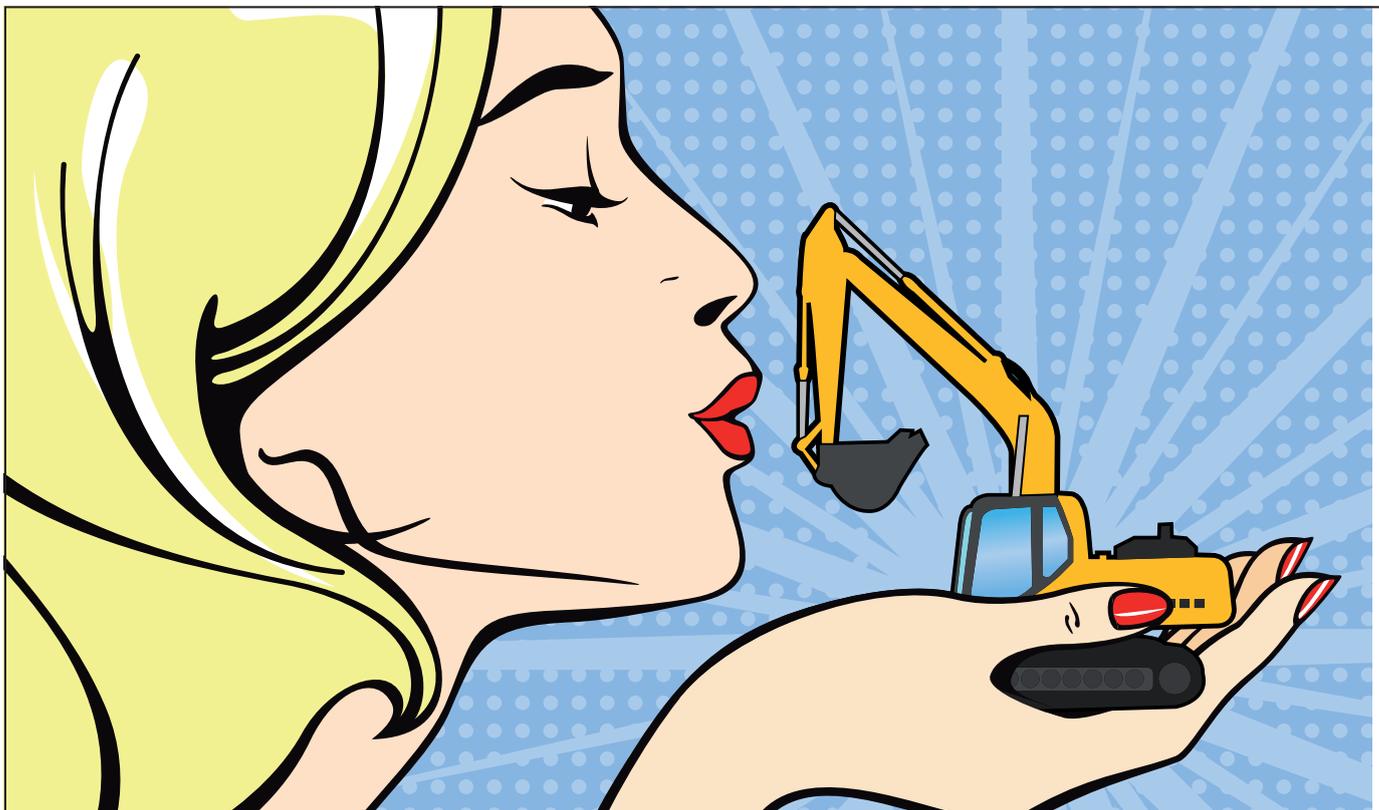
**Hamilton Aggregate in the US is a young, fast-growing company that has always favoured mobile crushing and screening equipment.**

needs with [Sandvik distributor] Crushing Tigers we run the machines for nine hours each day, and then run a preventative maintenance schedule to ensure reliability and maximum productivity," said Mr Hamilton.

A third facility in Quitman, Arkansas supplies material on demand to the local market. The flexibility of mobile crushers and screens comes into its own here as the units can be moved between the different quarries and quickly set up again as required.

This flexible approach has seen the company grow from a single 0.5 acre (0.2 ha) quarry to a three facility operation that has produced some 2 million tonnes of material in its short seven-year history.

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**Ammann claims to be the only manufacturer that can offer plant technology to produce new asphalt from 100% recycled asphalt pavement (RAP)**



# Adding to the mix



Increasing the use of recycled materials is a key focus for the mixing technology industry. **Helen Wright** reports.

**W**hatever the output needs, manufacturers of mixing plants are focussed improving efficiency, from consumption to more options for mixing temperature and recipes, new control systems and other environmental considerations such as noise and fumes.

For instance, recycling old asphalt – also known as reclaimed or recycled asphalt pavement (RAP) – is an absolute must in the industry, according to Ammann. In fact, Ammann claims to be the only manufacturer that can offer plant technology to produce new asphalt from 100% RAP, and offers a variety of technologies, depending on how much RAP is added to the mix.

It recommends adding cold RAP directly to the mix for quantities of up to 30%, but offers a range of specially designed drums for higher RAP rates up to 100%. The RAH 100 drum, for instance, can handle up to 100% RAP.

Meanwhile, Ammann has also introduced a new asphalt mixing plant, the Universal HRT, with increased use of recycled materials in mind. Designed to cope with up to 60% RAP, the plant features a fully integrated parallel drum directly above the mixer for optimal material flow, and boasts an output capacity of between 320 and 500 tonnes/hour. >

**Marini's new eTOWER asphalt plants can achieve recycling rates of nearly 50%, with higher proportions possible**

# MIXING TECHNOLOGY

## Adding to the mix

**Asphalt Drum Mixers is aiming for flexibility with its new stationary and self-erect asphalt storage silos that are compatible with both its own and competitor plants.**

Fayat-owned mixing plant manufacturer Marini is also developing new mixing towers focussed on coping with higher quantities of RAP. The company has introduced the new eTower family of asphalt plants, which currently consists of two models – the eTower 2000 (150 tonnes per hour) and eTower 2500 (200 tonnes per hour).

The towers feature two systems for introducing RAP – a recycling ring, and direct introduction in the mixer via an elevator. Recycling rates of nearly 50% can be achieved, while even higher recycling rates can be achieved by equipping the plant with an additional parallel dryer drum for RAP.

The eTower range has also been designed to be able to gain from recent developments in warm-mix asphalt production – a process which allows asphalt to be produced at a lower temperature of around 90°C to 150°C, instead of traditional hot mix temperatures of 140°C to 180°C.

Additives such as foam bitumen need to be added to the mix to achieve quality warm mix asphalt, and the eTower 2500 is fitted with Marini's AQUABlack foam bitumen production system, so the final asphalt temperature can be cut by more than 30°C, according to the company.

Warm mix production has the obvious benefits of cutting fuel consumption and decreasing emissions. In addition, engineering benefits include better compaction on the road, the ability to haul material for longer distances, and extending



**Altrad Belle's new towable concrete mixer – the AT350 – features a 280 litre drum and can be towed at speeds of up to 88.5 km/h.**

the paving season by being able to pave at lower temperatures. Indeed, Marini claims that warm-mix asphalt will soon account for 30% of production in North America.

### Transportability

Mobility is another important consideration for contractors looking to invest in a new plant, and Ammann has been working to make life easier in this respect, too. It has developed two new asphalt mixing plants – the Prime 140 and the EasyBatch 140 – with transportability firmly in mind.

Both plants boast outputs of 140 tonnes/hour, but the Prime 140 has a transport length of 23 m and width of 3.2 m, while the EasyBatch 140 comes pre-assembled on two trailers and can be set up without a crane. Its transport dimensions are 21 m long for the first trailer and 15.5 m long for the second, while both are 4.25 m high.

Mobility was also the key consideration for Astec when it was developing its new Nomad line of hot-mix asphalt plants, which have production ratings of 72 tonnes per hour, 117 tonnes per hour and 158 tonnes per hour. Astec claims that, with an experienced crew, Nomad plants can be erected in less than a day. >

**Astec's new Nomad line of hot-mix asphalt plants have production ratings of 72 tonnes per hour, 117 tonnes per hour and 158 tonnes per hour**



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Plant operator Christian Mark Palatino with his EasyBatch and the AVX.

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# SANY





**Simem's new Eagle series feature a concrete production range of 60 to 160 m<sup>3</sup>/h and are designed for easy transport with generic vehicles, as well as installation without foundations**



**US contractor Hosea O Weaver and Sons plant invested in a 272 tonne per hour Unified counterflow asphalt drum mixer from Astec. It found that the plant was able to consistently run at 317 tonnes per hour without causing a problem.**

Astec has also introduced new technology in the form of a diagnostic tool known as The Source. This is a hand-held device that simulates most of the electrical signals coming into an asphalt plant control system. It is said to help simplify plant setup and troubleshooting.

Once asphalt is produced, storage can then become an issue. Asphalt Drum Mixers (ADM) has tried to offer as much flexibility as it can in this respect by introducing new stationary and self-erect asphalt storage silos that are compatible with both its own and competitor models of asphalt plants.

The storage silos receive freshly mixed asphalt from a conveyor and keep it at a constant temperature until it is discharged. The stationary and self-erect designs allow them to be used in various asphalt plant configurations, and multiple capacity options are available.

The capacity of ADM's self-erect silos ranges from 30 to 75 tonnes, and stationary silo models hold between 100 and 300 tonnes of asphalt mix. All models are equipped with alarms to alert operators when asphalt levels are high, and they feature a fiberglass blanket insulation to provide heat retention while the mixture is stored. Optional oil or electric heating systems are available to ensure asphalt is kept at the desired temperature.

All silos can be equipped with low material alarms and LC1000 loadout computers, which work together with truck scales, weight batchers or reverse (negative) weigh systems. The LC1000 allows operators to access truck loading data, job files, silo inventory and more.

### Concrete

On the concrete side there are new developments focussed on increasing the efficiency of mixing technology, and recycling is also a key issue affecting developments in this sector.

## From waste to profit

Ecogravel used on Italian motorway project

**C**ontractor Tomat wanted to reduce its environmental impact by using Ecogravel instead of basalt aggregates on a project to construct the third lane of the Villesse-Gorizia motorway intersection in Italy.

Ecogravel is crushed slag that has been screened to remove residual iron. The resulting material has the obvious benefit of a reduced environmental impact compared to natural aggregate production.

One of the strengths of Ecogravel is said by asphalt plant manufacturer Marini to be the reliability of the grading curve, while it is also very resistant to abrasion and chipping. In addition, the fact that it is derived from a waste material of means that it is generating a profit where there would have been waste.

The company chose a 200 tonne per hour Marini Top Tower 3000 to produce the asphalt for the project. Designed for working in motorway conditions, all the plant's component parts including the aggregate cold feeders are positioned on metal foundations on compact ground and are said to be well-suited to relocation along the route.

The plant's bitumen and fuel silos were fitted with an overflow tank to avoid spillage in case of breakdown. The Top Tower 3000 also features insulated hot asphalt storage bins as standard.

Marini said a production rate of 27,000 tonnes in six months was achieved, allowing Tomat to complete the project on schedule.



# MIXING TECHNOLOGY

Adding to the mix



**SBM developed a self-sufficient mobile concrete batching plant, the Euromix 400C, for Dutch contractor Van Gansewinkel**

a 1200 mm belt conveyor between the aggregates hopper and the continuous mixing chamber, and offers full weighing options for all materials as well as automated record keeping.

The first customer for the Rapidmix 400CW in the US was Texas-based Rollcon. The new machine has been put to work on the latest phase of the Port of Houston development project, producing up to 400 tonnes of material per hour.

**Bobcat's concrete mixing attachment for compact loaders has a 270 litre capacity and can be remotely controlled.**

SBM, for instance, has concentrated on bespoke solutions for its customers, and developed a mobile concrete batching plant, the Euromix 400C, for Dutch contractor Van Gansewinkel.

The plant and has been designed to process waste materials into concrete – the contractor then stores this concrete mix on landfill sites. Due to local regulations, certain loose waste material cannot be deposited directly into landfill as it contains substances that could leach into ground water.

By mixing the waste material with cement and producing concrete, it binds the substance for long-term storage as landfill. The plant is required to work continuously with an output of over 400 tonnes per hour and comes with an independent generator.

SBM said the demands made on the control system could not be met by conventional devices, so it developed a microprocessor control system to control the plant by laptop and WLAN. This system meant that all data from the plant was immediately available for further electronic data processing, and allowed the concrete mixing plant to be supervised online.

To reduce service and maintenance works, a specially designed high-pressure cleaning system was also installed – reducing running operation costs, according to SBM.

Meanwhile, the new Rapidmix 400CW from Rapid International aims to offer higher production rates. It incorporates

**Rapid International has launched a new, continuous concrete mixing plant in North America – the Rapidmix 400CW**



reporting interest in its cement treated base (CTB) mixing technology – a strong, frost-resistant road base. CTB is comprised of native soils, gravels or manufactured aggregates mixed with cement and water in either a continuous flow or batch-type mixing plant. The resulting material is said to provide a weather resistant base which gains strength with age.

Rapid International said CTB can also distribute loads over a wider area, reducing the stresses on the subgrade. It is typically used as a pavement base for roads, streets, car parks, airports, materials handling and storage areas.

Increasing the use of recycled pavement, and reducing the amount of energy needed to produce high quality asphalt and concrete will continue to be key focusses for manufacturers of mixing technology. It will be interesting to see how the latest materials shape equipment developments in the future. **ic**





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**Bauer. Technology to build the future.**

# Into Africa

The first Bauma Africa exhibition takes place in South Africa in September, and is going to be more than twice as big as originally planned. **Helen Wright** reports.

**W**hen Messe München International (MMI) announced its plans for a new construction and mining exhibition in South Africa, it was hoped that around 200 exhibitors would take part, using 20,000 m<sup>2</sup> of exhibition space.

But this turned out to be a conservative estimate, and MMI has since revised its expectations. Bauma Africa is now sold out and expected to host over 500 exhibitors from 34 countries on 60,000 m<sup>2</sup> of exhibition space. Some 15,000 visitors are expected to the event, which takes place at the Gallagher Convention Centre, Johannesburg from 18 to 21 September.

Bell Equipment will be one of the big names at the show, and will debut its new B60D, 60 tonne payload articulated dump truck (ADT). The manufacturer said the monster machine opened up opportunities for the company in the rigid hauler domain.

The B60D, which follows on from its 50 tonne B50D, has full articulation and oscillation steering but differs from a traditional ADT in that it has two driven axles, giving it 4x4 capability.

As well as the show-stopping ADT, Bell will also be displaying its new B50D Ejector as well as the E-series ADT and upgraded Fleetm@tic telematics system.

And Bell – which is also a distributor in South Africa for other manufacturers – will be showcasing the new Bomag MPH 600 soil stabiliser and asphalt recycler, and will announce the expansion of its Liebherr range of equipment in Southern Africa to include three larger dozers, the Liebherr PR744, PR754 and PR764 models.



**Bell Equipment will have its E-Series ADTs on show at Bauma Africa, and will also debut a new 60 tonne truck.**

Its newest partner, Finlay, will also display a range of mobile material processing equipment that Bell distributes in Southern Africa.

Meanwhile, South African distributor Babcock International will launch three new SDLG machines at the show. SDLG is Volvo's Chinese joint venture, and the machines being introduced at Bauma Africa are the LG9787L wheeled loader with a bucket capacity of >

## Getting to the show

Plan your trip to Johannesburg for Bauma Africa 2013

**B**auma Africa takes place from 18 to 21 September, 2013, at the Gallagher Convention Centre, Midrand Johannesburg, South Africa.

The Gallagher Convention Centre is located 36 km southeast from O.R. Tambo International Airport in Johannesburg. Take either a taxi or the Gautrain from the airport to the convention centre.

By taxi from the airport: Bauma Africa organiser MMI says the preferred taxi company for the airport is OR Tambo International Airport Taxi Association (ORITATA). Taxis cost around ZAR 15 (US\$ 1.50) per km.

By train from the airport: Take Gautrain Airport Line (yellow) change at Marlboro Station into North-South Commuter Line (red) to Hatfield, drop off at Midrand Station. Gautrain provides shuttle buses from the Midrand Station to Gallagher Convention Centre and back.

By car from the airport: Take the R24 to Johannesburg, at Gillooly's Interchange take the N3 split to Pretoria. Stay on this road for approximately 15 km, take the N1 split to Pretoria. Take either the Allandale or New Road off ramp and follow the directions to the Gallagher Convention Centre.

■ For more detailed instructions, go to: [www.bauma-africa.com/en/travel](http://www.bauma-africa.com/en/travel)

Alternatively, scan the QR code with a smart phone to go directly to the website.



**bauma**  
**Africa 2013**



**SDLG distributor Babcock International plans to launch a trio of new machines at the show, including the LGG8190 16 tonne class motor grader.**

4.2 m<sup>3</sup>, the LGG8190 16 tonne class motor grader and the LGG812H 12 tonne single drum hydrostatic roller.

### Drilling

Meanwhile, Bauer will exhibit a broad range of specialist foundation equipment on its stand, including a BG 20 H rotary drilling rig, which will be fitted with a special tool for rock socketing at the show.

Other models on display will include the Multi-Hammer Drill for hard rock drilling – a particular feature of many Southern African regions, while rigs for the exploration and waterwell drilling markets will also be on the stand.

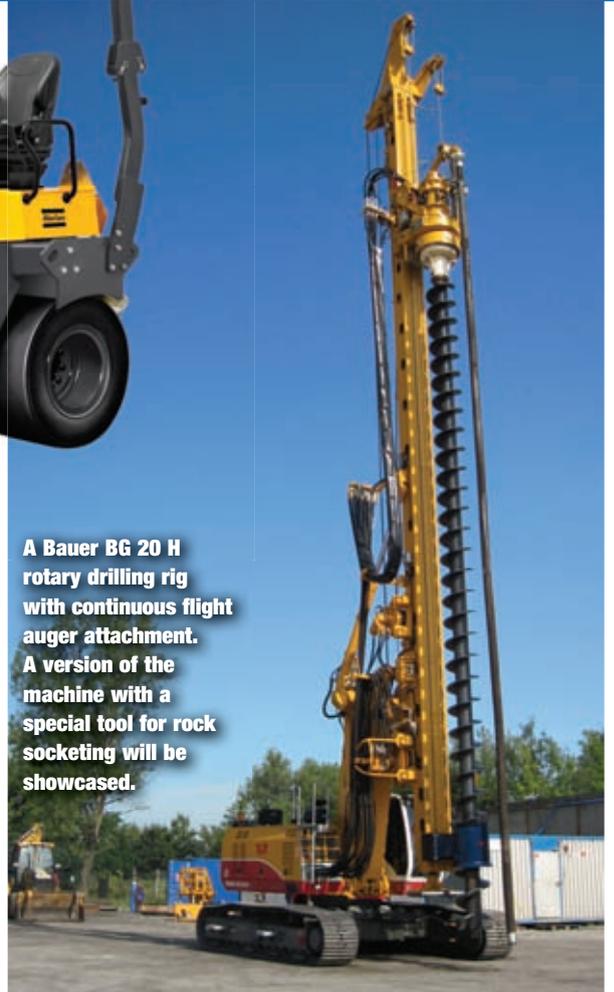
Bauer subsidiary Hausherr System Bohrtechnik will have an HSB 3000 blasthole drill on show, while Klemm Bohrtechnik, another Bauer subsidiary, will showcase a KR 909-1 anchor drill rig.

More drilling technology will be on show from Everdigm, which will display its ECR 12 and ECR 17 core drilling rigs. The manufacturer said the fact that the drills are driven by gears instead of chains distinguishes them from other models on the market and contributes to lower heat generation.



**Atlas Copco will focus on construction and rental audiences, with products on show including a Dynapac CC1200C double drum vibratory roller.**

**A Bauer BG 20 H rotary drilling rig with continuous flight auger attachment. A version of the machine with a special tool for rock socketing will be showcased.**



**Everdigm will display its ECR 12 and ECR 17 core drilling rigs.**



**Falsework and formwork manufacturer Doka will showcase its new Dokadek 30 panel floor formwork.**

Meanwhile, Ditch Witch will be showcasing its JT25 horizontal directional drill at the exhibition, which is designed for installing utility pipes and cables with diameters of up to 12 in (305 mm) at lengths of up to 500 ft (152 m). The machine is fitted with a Cummins QSB4.5 diesel, rated at 130 hp (97 kW), and is available in a Tier 3 emissions configuration for African markets, as opposed to the Tier 4 Interim/ Stage IIIB requirement for the US and Europe.

On the crushing and screening side, Powerscreen will display its XH320X impact crusher and Warrior 800 screen in partnership with its South African distributor ELB Equipment.

And Caterpillar's Southern Africa dealer Barloworld Power will be showcasing the Cat C7.1 Acert Tier 3-compliant engine at the show – a 116-225 kW, 7.1 litre model.

Meanwhile, falsework and formwork manufacturer Doka will also be present at the exhibition, showcasing its new Dokadek 30 panel floor formwork. This is a beamless hand-set formwork system, designed as a lightweight steel construction with powder-coated frames and the company's Xlife sheets.

### Optimistic

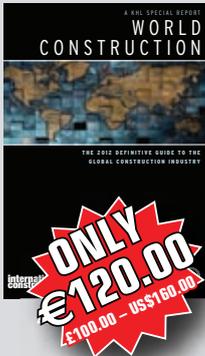
CEO of MMI South Africa Elaine Crewe was optimistic that the inaugural Bauma Africa would be a success. Ms Crewe said investors and businesses were looking towards developing countries for new growth, and Africa's mining and construction industries were set to profit from this move.

“The growing pool of international entrants into the African market is a telling sign of just how important Africa is becoming and the need for specialised players in the industry. We trust that Bauma Africa will highlight new products in these sectors.” **IC**

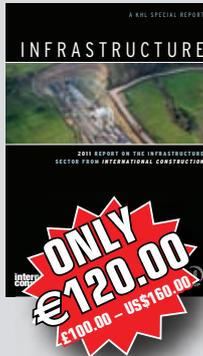
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## SITE REPORT

Reaping the rewards

**The advantage of river gravel as a feed material is there is no need for blasting or ripping. It can be excavated and loaded all in one process as shown here using a Cat 324D, which weighs in at just below 25 tonnes.**



Following a huge investment in equipment in 2008 and 2009, quarry operator and contractor Groupe Mojazine has grown to be one of the largest construction companies around Marrakech, Morocco. **Chris Sleight** reports.

# Reaping the

**T**hroughout the last few years of economic turmoil, Morocco has managed to maintain a steady path of growth. Even in 2009 when global GDP fell for the first time in generations, the Moroccan economy grew by almost +5%. It also escaped the disruption of the Arab Spring, which affected many of its neighbours in 2011.

This stability, and at times robust growth, has been good news for the country's construction industry, stimulating investment by the private and public sectors alike. On the government side, a series of major motorway projects to link some of the country's major cities, along with plans to improve rural roads, are providing a boost to the industry. Meanwhile, construction related to the tourist industry and real estate developments are significant drivers on the private side.

Both these are key factors in and around the historic city of

Marrakech. Tractafric, Caterpillar's dealer for Morocco and Central Africa has a branch in the city, and its head, Mohamed Lamlyah, said business was good.

The branch has about 300 customers in its 400 km<sup>2</sup> territory, ten of which Mr Lamlyah describes as large – having fleets of 50 machines or more. He said that in total the dealership serves a population of some 800 machines, many of which are less than five years old.

Infrastructure work, including road building, water, sewerage, along with quarrying, are key activities and major projects in the region include the 400 km Safi to El Jadida coastal motorway and the 170 km Marrakech to Beni Mellal highway. In fact, although the new purpose-built Tartaric branch in Marrakech has only been open a year, business is such that the company may outgrow it.

"We are very optimistic. We think we'll have to expand again in five years," said Mr Lamlyah. "That is based on current projects and things that are coming up. There is a big programme of road building in rural areas for example. There are lots of opportunities in paving and road maintenance."

### Equipment investment

One of Tractafric's larger customers in the Marrakech area is Groupe Mojazine, which has five divisions active in the public works, construction materials, real estate, road building & bitumen products and pre-fabricated concrete products businesses.

The company was set up in 2001, and now owns a fleet of more than 200 pieces of construction equipment, about a third of which are Cat. These include the majority of its excavators – mostly 20 tonne class machines – as well as 80% of its 20-strong wheeled loader fleet, which goes up to 24 tonne 966H models.

**The view from the primary crusher hopper at Mojazine's Sidi Ghanem quarry.**







# rewards

The company also runs a fleet of more than 100 on-highway trucks, most of which are Volvos, but with a significant number of Scania in the mix.

And it is a relatively young fleet. According to Adil Laaribi, head of Mojazine's equipment department, most of the machines were bought five years ago or so. "We made a big investment in equipment in 2008 and 2009. It was a risk but it paid off," he said.

The modern and youthful fleet is something Mr Laaribi sees as a key success factor for the company, as is the working relationship that has developed between Mojazine and Tractaftric. "The equipment is a strong point for us. A strong brand backed by a strong dealer helps us to be competitive. You need a long-term vision when you chose a partner, and we have had problems with other suppliers and their local dealers," he said.

The company makes use of the Product Link telematics system offered by Caterpillar on its machines, a level of sophistication Mr Lamlyah said was unusual among the dealer's customers. However, Mr Laaribi was enthusiastic about the benefits it offered.

"This is the solution offered by Caterpillar and Tractaftric to follow equipment very closely. We use Product Link to manage the fleet and track the number of hours. We can plan the maintenance of the machines accurately. It also helps prevent breakdowns because it sends alerts. Basically it increases the up-time. It also helps us to monitor fuel consumption and prevent theft of fuel," he said.

## Aggregates production

Mojazine operates four quarries around Marrakech to feed its own construction businesses. The extraction part of the operation is fairly straightforward, as the sites are dried river beds.

This means there is no need for any blasting or even ripping. The material is loose enough to be excavated by one of the

company's many 20 tonne class Cat tracked excavators.

The journey to the fixed crushing and screening plants is made using Mojazine's on-highway trucks, as the ground conditions are firm enough and the gradients shallow enough that more expensive off-highway haulers are not required.

The crushing plants themselves are built around Metso crushers. Mojazine favours C110 jaw crushers for primary work and HP200 cone crushers for further reduction and to help produce aggregates that are as cubic in dimensions as possible.

This setup gives the company the flexibility to produce six individually sized products in various grades from 0 to 25 mm using the cone units as secondary and tertiary crushers. It can also produce a 0 to 31.5 mm grade direct from the jaw crusher.

This allows it to produce 200 tonnes of aggregates per hour at each facility if required, and it is the basis for production at all four of the company's quarries.

The fact that the feed material is river gravel and sand means oversized boulders are not a huge problem for the crushing plants. However, the relatively high amount of fines means the company is looking into dust suppression systems for its conveyors as well as a cyclone washing system at the quarry near its headquarters in Sidi Ghanem for sand washing.

Further plans for this site include a pre-cast concrete plant to produce standard components such as pipes, blocks and paving slabs.

With the Moroccan economy expected to keep growing and Marrakech itself continuing to attract tourists, Mojazine's investment in a modern fleet and its commitment to modern techniques to manage the machines should continue to stand it in good stead.

Stockpiling products using a Cat 966H loader at Mojazine's quarry near Tahnaout, some 20 km south of Marrakech.



Groupe Mojazine's Adil Laaribi (left) with Tractaftric's Mohamed Lamlyah.



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**Junctions on the Anhanguera to Bandeirantes toll road. The government is investing BRL 42 billion (US\$ 19 billion) on nine stretches of toll road.**

The Brazilian government is addressing transport bottlenecks that are hindering the country's growth, according to the **Brazilian Association of Technology for Equipment and Maintenance (SOBRATEMA)**

# Investing in logistics

In August 2012, Brazilian president Dilma Rousseff launched the country's Investment Programme in Logistics (IPL). It proposes funding of BRL 133 billion (US\$ 61 billion), of which BRL 42 billion (US\$ 19 billion) is for nine stretches of highways and BRL 91 billion (US\$ 42 billion) is for 10,000 km of new railway lines in 12 sections.

The programme's goal is to increase public and private investment in transport infrastructure and promote the integration of highways, railways, ports and airports. Reducing costs and increasing transport capacity are key aims, as well as promoting efficiency and increasing the country's competitiveness.

The BRL 42 billion (US\$ 19 billion) highway investment is planned as a series of 30 years concessions, of which BRL 23.5 billion (US\$ 11 billion) must be made in the first five years. The BRL 91 billion (US\$ 42 billion) rail investment is planned as 35 year concessions, of which BRL 56 billion (US\$ 26 billion) must be made in the first five years.

A government agency, Empresa de Planejamento e Logística, has been created to plan and monitor projects and promote the integration of infrastructure in Brazil.

As far as rail is concerned, the government would like to see public-private partnerships take on the 12 projects, which span the country.

There are two phases of development – the first comprises 2,600 km of rail construction, including sections of the Ferroanel

network to be built around the metropolitan area of São Paulo, a new rail line to the Port of Santos on the southeast coast and a rail link between Lucas do Rio Verde and Uruaçu in central Brazil. Contracts for these and other projects from the first phase are scheduled to be awarded by July this year.

Contracts for the second phase of projects, which include a rail link between the city of Belo Horizonte in the southeast to Salvador on the northeast, are due to be signed between July and September.

Meanwhile, the nine stretches of highway that the government aims to build cover 7,500 km and are planned as toll roads. The new highways and the 10,000 km of railways are expected to be completed by the end of 2018.

## Port investment

Additional investment is also planned to make Brazil's ports more competitive. The government plans investments totalling BRL 54.2 billion (US\$ 25 billion) in this sector by 2017, and has also drawn up new regulations promoting the integration of rail, road and water transport.

The funds will benefit more than 20 ports in the south, southeast and northeast. The government is also open to the possibility of creating new private ports in the country.

The Brazilian government is keen to attract private investment for transport infrastructure, and the investments it has planned should address the bottlenecks that are hindering the country's growth. This of course should be positive for the country's construction sector, and the wider economy as a whole. **ic**

**A new rail line to the Port of Santos is being constructed as part of a BRL 91 billion (US\$ 42 billion) investment in the country's rail network.**

**The government has provided for investments totalling BRL 54.2 billion (US\$ 25 billion) in Brazil's ports by 2017. Pictured is the Port of Santos on the southeast coast.**



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## EQUIPMENT

Terex ■ Robbins

### HIGHLIGHT

#### RUSSIA

## Metro breakthrough

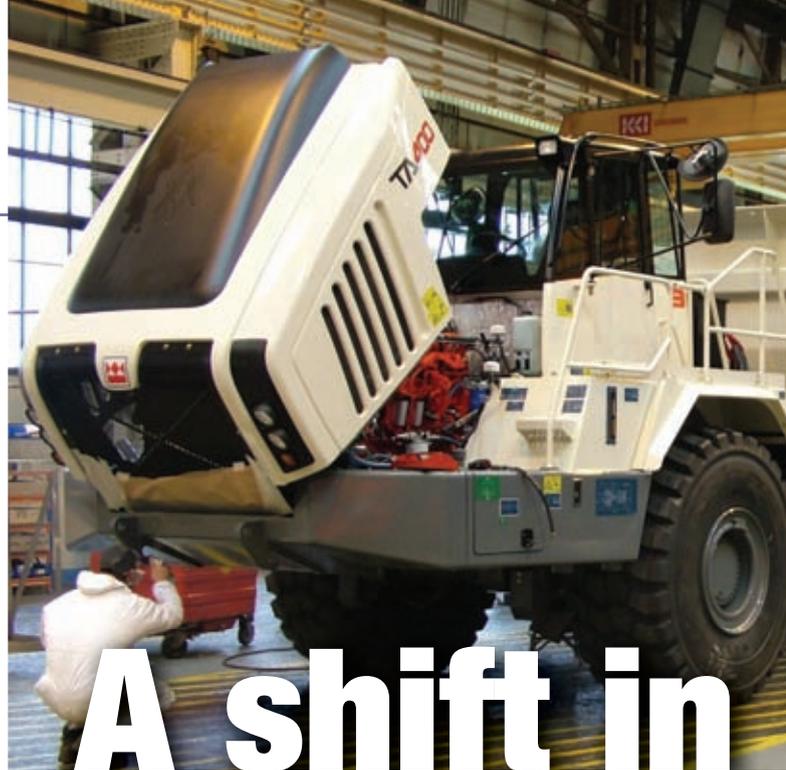
The first of three Robbins earth pressure balance (EPB) tunnel boring machines (TBMs) excavating the Moscow Metro has made its breakthrough. As well as finishing the bore early in late May, the project saw a new Russian record set by the 6.2 m diameter machine, with an advance of 37.8 m being achieved in a single day in April 2013 – the greatest ever achieved for a machine in this class in the country.

Launched in the winter of 2012, the TBM achieved advance rates of 150 m per week. “The soil condition, crew experience, rigorous schedule, continuous conveyor, and the reliability of the Robbins TBM are all factors that helped achieve the record,” said Vadim Bocharov of contractor SK MOST.

The machine will now be disassembled in the receiving station site and launched on an additional 1.4 km tunnel in the last quarter of 2013. It is one of several Robbins EPBs on the massive metro project where dozens of TBMs are operating simultaneously. Two 6.6 m diameter Robbins EPBs are excavating left and right-hand tunnels, each 2.0 km in length, for contractor Engeocom. A third machine refurbished by Robbins for Engeocom, nicknamed “Julia”, is also excavating a 2 km section of tunnel.

Ground conditions in the city are said to be challenging, consisting of fine sand, gravel, loam, stiff clays and boulders. The EPBs are designed for the conditions, with active articulation to enable excavation of tighter curves without the risk of tunnel segments deforming. Two-component back-filling is being used to reduce the risk of settlement at the densely urban tunnel sites. Mixed ground cutterheads reinforced with abrasion-resistant wear plate give the option of changing the carbide knife-edge bits with 17-in (432 mm) disc cutters, depending on the conditions.

Moscow’s Metro Development Program, unveiled in 2012 by the Moscow Government, calls for 150 km of new metro lines to be built in the next eight years. Work thus far has been around the clock, with close to 18,000 workers and specialists engaged in the projects. Their number is expected to reach 35,000 by the end of 2013.



# A shift in

Terex is pushing more and more into emerging markets with both its articulated and rigid frame haulers. **Helen Wright** reports.

**T**erex’s 28,000 m<sup>2</sup> off-highway truck factory in Motherwell, UK, has seen a US\$ 5 million investment in production line equipment for both its rigid and articulated dump trucks (RDTs and ADTs).

Production is poised to increase in-line with new opportunities. While the factory can produce up to six ADTs and two RDTs per day running at maximum capacity, its current production target is 400 ADTs and RTDs combined for 2013.

Demand in the mature markets of North America and Europe may have softened in recent years, but sales of both ADTs and RDTs are increasing in emerging markets, and Terex is eyeing these opportunities. John Mlonek, commercial sales manager at Terex Construction, said, “We have seen a dramatic

change in recent years – the whole emphasis has shifted towards emerging markets.”

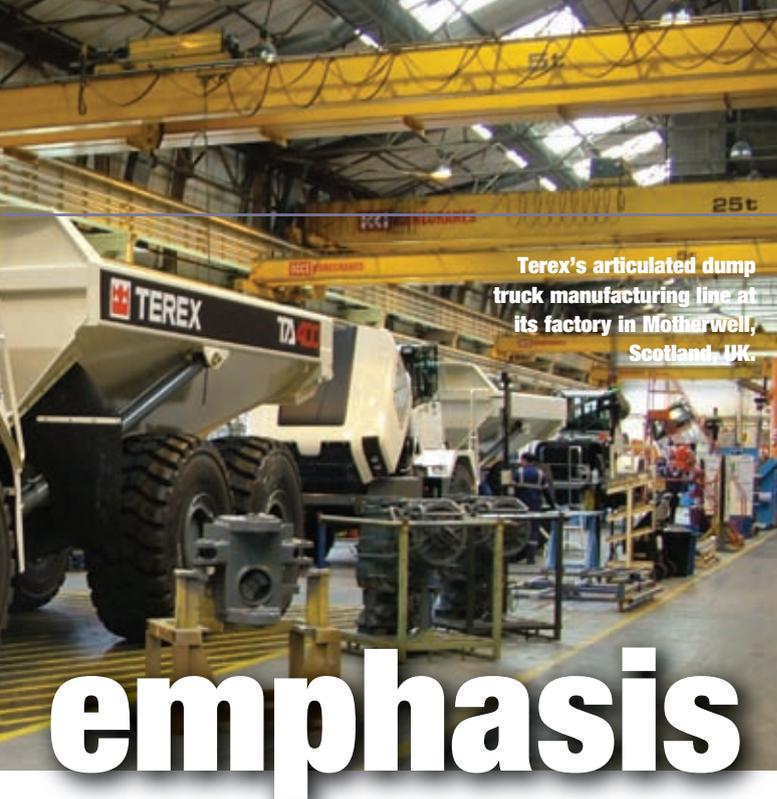
Mr Mlonek said the company was considering opportunities in the world’s growth markets, and wouldn’t rule out further joint ventures. Terex has experience in this field – last year, it established a joint venture with Russian Machines to manufacture construction and road building equipment in Russia, and also set up a joint venture partnership in China with Sinomach to produce truck cranes.

“With the mineral wealth of Africa, Russia and Asia, we have to think of our options,” Mr Mlonek said. “It may be in the future that we will look at joint ventures in Africa and elsewhere – we are considering our options.”

The largest ADT model Terex manufactures is the 40 tonne class TA400 – part of its Generation 9 range that also includes the 30-tonne class TA300 and 25-tonne class TA250. Terex also manufactures five RDTs, from 32 tonnes to 91 tonnes payload.



**John Mlonek, commercial sales manager at Terex Construction:** “We have seen a dramatic change in recent years – the whole emphasis has shifted towards emerging markets.”



Terex's articulated dump truck manufacturing line at its factory in Motherwell, Scotland, UK.

# emphasis



A Terex TR60 rigid dump truck – a 55 tonne payload machine powered by a 522 kW engine.

“In terms of ADTs, the 30 tonne models are most requested in Europe, but we are seeing demand for larger models increase in Indonesia, South Africa and Russia. We offer Tier 4-compliant machines for the EU and North America, and Tier 2 machines for sales in the rest of the world,” Mr Mlonek said.

## Russian JV

Scott Pollock, product manager for trucks at Terex Construction, said Terex planned to expand its joint venture with Russian Machines in the future to include the manufacture of its TA400 ADT and TR60 RDT models.

“Russia is a very positive market, as is the whole of Eastern Europe,” Mr Pollock said. “Demand here is for the RDTs and the larger ADTs, a trend that we are seeing elsewhere in the world as well.

“We need to consider expansion

into low specification markets in Africa and the far East, but instead of focussing on developing larger ADTs, for instance, we are interested in increasing the capabilities of our current machines, stretching the competitiveness of our larger ADTs - increasing the tonnage and reducing the cost of ownership.”

And Terex is also concentrating on developing new technology for its RTD and ADT ranges, with the next phase focussing on fleet management and GPS control technology for its trucks. Any new GPS or telematics technology would be developed as a joint venture with a technology partner, Mr Mlonek said.

With the company keen to explore the potential for fresh joint ventures in new markets, it will be interesting to see the level of technology it adopts when deals are finalised and production begins. **IC**

## HIGHLIGHTS

### TURKEY

## Expansion plans

Hidromek plans to expand its facilities as a result of strong business growth. Marketing manager Arda Güven said the company has bought 1,000 acres (405 Ha) of land near its current manufacturing facilities in Ankara for future expansion.

“We aim to grow into a full line producer, and will build a big production facility there, but are still discussing which machines we will produce. We are seeing increased demand for higher tonnage excavators from the marble quarrying and mining sectors, but also increased interest in compact machines. We are also the dealer for Yanmar mini excavators in Turkey and have seen a definite increase in demand on this end too,” said Mr Güven.

He was also optimistic on future prospects in the Turkish market, given the number of large infrastructure projects planned in the coming years,

“The Turkish government has also declared that it will seek to use Turkish brands as far as possible for these infrastructure projects,” he said.



### GERMANY

## Tognum names Dohle as CEO

Engine manufacturer Tognum has appointed former chief technology officer and deputy CEO Dr Ulrich Dohle as its new chairman and CEO.

Dr Dohle succeeds Joachim Coers, who left the company after nine years at his own request. Tognum – which produces diesel and gas engines under the MTU brand – said a priority for the manufacturer would be to expand its operations around the world. At the same time, it said it also planned to intensify its co-operation with Rolls-Royce and Daimler.

In April, the Tognum supervisory board extended Dr Dohle's contract until 31 December, 2015.



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Joining the company from Volvo Construction Equipment, Hiab's new senior vice president for global markets, Carl Gustaf Göransson, has a plan to make one of the oldest names in loader cranes more visible and approachable around the world. **Chris Sleight** reports.

# Renewed focus

There are parts of the world where people in the building and construction trades will say 'Hiab' instead of 'loader crane.' This remarkable piece of brand recognition is thanks to the company's long history – it will celebrate its 70<sup>th</sup> birthday next year – but anecdotally at least, Hiab does not seem to have the same iron grip on the markets it once enjoyed.

Previously with Volvo Construction Equipment as managing director of the Western part of the Europe, Africa & Middle East (EAME) territory, Carl Gustaf Göransson was brought on-board to improve the sales network and address some of these issues.

Indeed, when *iC* spoke to him, he identified this as a key priority. "We are working very much with how our brand is perceived. We have very strong brand recognition, and we want to build on that in the market and understand what the customer wants. We also see the need to adapt in some cases and we may consolidate our distribution to be more efficient in some markets," he said.

Loader cranes are primarily sold in the richer countries of the world, but that is not to say the company is not eyeing emerging markets.

"It is a developed world product, but there are opportunities in developing markets for stiff boom cranes, with our joint venture in



Carl Gustaf Göransson

China for example. We are looking at Russia, and similarly in Brazil and the rest of South America, I think we can succeed if we have the right product," said Mr Göransson.

The joint-venture in China is a deal announced last year with China national Heavy Duty Truck Group Co. Ltd. (CNHTC), which makes products under the Sinotruk brand. The agreement will allow Hiab products to be sold through the Sinotruk network in China, starting with six models of stiff boom crane.

"It is great access to distribution in China, which we want to use to get our products out there," said Mr Göransson.

But he acknowledged that while emerging countries might be an opportunity for truck cranes, it would take a careful approach to succeed.

"We are looking at how comparable businesses have done it, and learning from that. The portfolio we have is strong. If the

market wants a premium spec product, we will do that with the right distribution.

"If you look at the market for trucks in China for example, that is becoming more international, and they normally come with our type of products. We want to be a leader, so we need to be in those markets and we want to be local.

"What's going on within the R&D process is us asking 'What do we have within the portfolio, and what can we apply to these markets that maybe require less technology?'" he said.

## What will change?

In closing, *IC* asked Göransson what changes customers would see following his appointment. "From the basic position, we want to deliver our products more efficiently – to get them configured quickly and get them delivered on time. Stronger field support – we are good, but we want to become even better," he said. **IC**



Hiab's joint venture with CNHTC will give it access to Sinotruk's distribution network in China.

JCB has entered the six cylinder diesel engine arena with the launch of the Dieselmax 672, and has also introduced other new machines.

**Lindsay Gale** reports.

# Firing on all six cylinders

**J**CB has announced its entry into the six cylinder diesel engine arena with the launch of the JCB Dieselmax 672, the result of a UK£ 45 million (US\$ 69 million) development programme.

To date, the company has built more than 250,000 four cylinder units since production began, and the new engine is the next logical step in its engine development programme. It will be produced on a dedicated line at the JCB Power System's facility in Derbyshire, UK.

The Dieselmax 672 is based on its 4.8 litre four cylinder engine, providing a high commonality of parts, and will be available in four ratings – 140 kW, 165 kW, 190 kW and 225 kW, with a maximum torque of 1,200 Nm.

According to JCB, the new engine will offer a substantial saving in fuel consumption of up to 8% over engines previously used in its JS excavator range. It is the result of a two-year development programme and already has undergone more than 50,000 hours of testing, much of which was done in the field.

It initially will be available as a Tier 2/Stage II unit for machines being sold into less regulated parts of the world, such as Russia, Brazil and China.

The first machines to see the new engine will be the company's JS330 and JS360 tracked excavators. Other machines will be offered with the JCB engine option as time progresses.

According to Tim Burnhope, JCB's innovation and product development officer, a Tier 4 final/Stage IV version should be available by mid-2015.

Of note is the fact that JCB's Ecomax engines meet the current engine emission requirements without the use of a diesel particulate filter or selective catalytic reduction.

Emissions compliance is achieved through the use of exhaust gas recirculation, a variable geometry turbocharger, common rail fuel injection and a highly efficient combustion process.

JCB chairman Sir Anthony Bamford said, "In a relatively short space of time we have become a major producer of engines. Today more than 70% of JCB machines are powered by our engines.

"The move into six cylinder engine production is a historic moment for our business and a natural step to take and we look forward to setting new standards in performance and fuel efficiency." **ic**

JCB's new six cylinder Dieselmax 672 diesel engine was unveiled at the company's Rocester, UK, headquarters



## Machine updates

Reduced emissions for excavators and loaders

**A**t the same event that the new engine was announced, JCB showed off a number of machines, including additions to its latest generation of JS excavators that meet the requirements of the Tier 4 Interim/Stage IIIB emissions legislation.

The new machines were the tracked 17 tonne class JS160LC and 22 tonne class JS220LC, and the wheeled 16 tonne class JS145, all of which are powered by JCB's Ecomax four cylinder diesel. In addition, the company unveiled two Isuzu-powered models, the 24 tonne class JS240NLC and 38 tonne class JS360LC.

Also on show for the first time were two new wheeled loaders, the 8.2 tonne 411 and 9.6 tonne 417, the use the Tier 4 Interim/Stage IIIB compliant 4.4 litre JCB Ecomax engine that delivers 93 kW in the 417 and 68 kW in the 411. The 411 sports a 1.2 m<sup>3</sup> capacity bucket as standard, while the 417 is a 1.6 m<sup>3</sup> bucket capacity machine.



**The JS220LC is one of two tracked excavators that now conform to the latest engine emissions regulations through the use of an Ecomax 4 cylinder engine**







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