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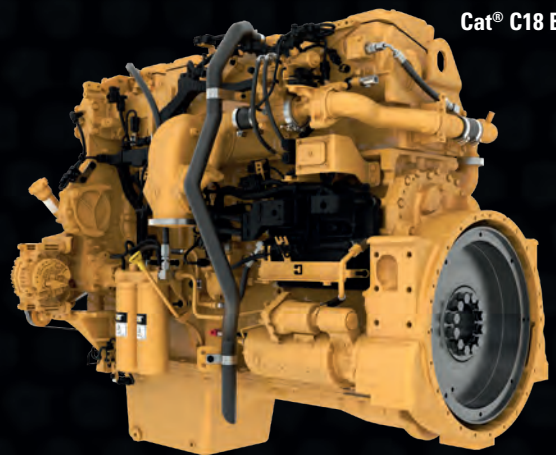
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THE MAGAZINE FOR EUROPE'S CONSTRUCTION INDUSTRY

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Volume 32 | Number 9 | November 2021

A KHL Group publication

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president
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DRIVE IT.
PROFIT.**



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The elephant in the greenhouse

The COP26 meeting taking place in Glasgow, Scotland, as I write, is not just a gathering of politicians.

The Conference of Parties also includes representatives from business and industry, including many movers and shakers from the world of construction.

And why not – we all know the role the built environment continues to play in greenhouse gas emissions. You could say it's the biggest elephant in the room.

Unfortunately, like supertankers, elephants take a while to turn themselves around – not helpful when most of the world's leaders are gathered to hear – and deliver – good news.

It seems like only yesterday, for example, that the Paris Climate Accord was signed, yet the momentous declaration was made six years ago, at COP21.

Leaders at COP26 will hope the pledges made and targets set at that event can now be fully actioned, with the initial 2030 deadlines edging closer.

As the conference began, leaders were presented with a document from the group including Architects Declare, calling on world governments to go further than ever before in reforming building codes – to regulate the energy performance of buildings, regulate embodied carbon in new building and promote reuse of existing structures.

The report also calls for the reform of public procurement, based on industry-leading standards, along with numerous adjustments to promote the adaptive reuse of buildings.

Of course, as the largest construction clients within their respective countries, governments are perfectly positioned to set the strictest standards for companies involved in construction projects; not just the developers and primary contractors, but sub-contractors and every company within the supply chain.

As opposed to fearing edicts from COP26, we should be hoping for and even demanding a change in the way we build; it's the only way we have a chance of meeting the ambitious Paris Climate Accord pledges and keeping global warming below 2 degrees.

Mike Hayes, Editor

Carbon negative manufactured limestone from OCO Technology has been used in an interactive statue on display in Glasgow during COP26



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Tandem Rollers

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Industry specialists offer their opinions to *Construction Europe* on the many and varied supply chain issues that are reported to be holding back the European industry's recovery. *Mike Hayes* reports



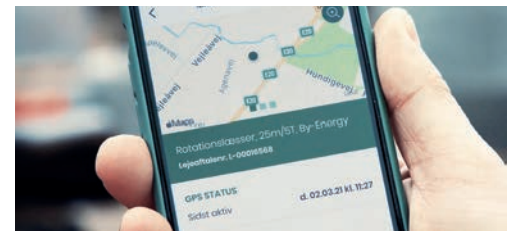
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EVENTS DIARY

2021

Smopyc

Nov 17-20, 2021
Zaragoza
Spain
www.feriazaragoza.com
/smopyc-2021

2022

UK Construction Week

May 3-5, 2022
London
UK
ukconstructionweek.com

GIC-Concrete Days

April 28-30, 2022
Piacenza
Italy
www.gic-expo.it

Hillhead

June 21-23, 2022
Buxton
UK
www.hillhead.com

AUSTRIA

Strabag fined €45 million in cartel ruling

Two companies within the Austrian construction group found guilty by the country's competition authority

Strabag has been handed a fine of €45.37 million, after two of its group companies were found to have participated in a construction cartel.

Austria's Federal Competition Authority (BWB) said Strabag AG and F Lang uK Menhofer Baugesellschaft had been involved in "uniform and continued infringement with price fixing, market sharing and information exchange with competitors in relation to public and private tenders in the field of civil engineering in Austria in the period from July 2002 to October 2017".

Strabag acknowledged the fine, saying the firms



Strabag is Austria's largest contractor

involved had cooperated fully with the BWB, since formal proceedings against them began in 2019.

Strabag CEO Thomas Birtel said it was "a great personal disappointment that the allegations turned out to be partly justified after intensive investigations".

He added that lessons had been learned and the group has instituted an external monitoring system to guard against a repeat of the wrongdoing. The company claims that "The acknowledgment [of the two companies' actions] and the full cooperation with the BWB had a correspondingly positive effect on the amount of the fine applied for."

ce

UK/SERBIA

UK to fund 5G-ready motorway in Serbia

US-owned construction giant Bechtel has completed a deal to build a major road in Serbia, funded by a €430 million loan from the UK.

The 112km-long Morava Corridor – which will also include an adjacent flood defence system – will be jointly built by Bechtel and Turkish engineering company ENKA.

The scope of work for the Bechtel ENKA team will include the construction of up to 40 bridges, with the longest approximately 600m. A telecommunication corridor will be built beneath the side of the motorway to allow for the future installation of 5G fibre.

The UK Export Finance

(UKEF) loan to Serbia comes with a proviso that Bechtel use UK goods and services on the project, which should benefit the UK economy to the tune of around €150 million.

The project is expected to create around 10,000

jobs, including 4,000 at peak construction.

Running between Pojate and Preljina, the road will also link with the motorway that runs between Serbia's borders with Hungary and North Macedonia.

Bechtel CEO Brendan Bechtel said, "At a time of post-COVID recovery, this investment in the supply chain will benefit both the UK and Serbian economies and will also enable Bechtel to continue to grow our partnerships in both countries."

ce

ROMANIA

Transylvanian construction project scares off bidders

Five out of the six teams shortlisted for a €1bn motorway project in the Transylvania region of Romania have not submitted bids for the deal.

The country's National Company for Road Infrastructure Management (CNAIR) confirmed that only the joint venture between two Istanbul-based contractors, Mapa Group and Cengiz Holdings, submitted a proposal by the 20 October deadline.

In July, six teams were chosen and given two months to prepare their bids. This was then extended to three months.

Mapa and Cengiz will now have 18 months to design the project, plus 50 months for construction.

The tender is for the second section of a 122km highway between Sibiu and Pitesti.

The project will be split into five sections, with the Cornetu-Boita section including the creation of 49 bridges and viaducts, alongside seven tunnels.

IMAGE COURTESY ENKA



Aerial view of construction work on the Morava Corridor in Serbia

Following the successful holding of a pilot trade fair under coronavirus conditions and the IAA Mobility event in September by Messe München, there are hopes that the Bauma trade show could be held as "almost normal".

IAA Mobility, organised by Messe München, took place with an elaborate safety and hygiene concept. Three Bauma exhibitors attended the event to see the measures first-hand, including Anke Hadwiger, Head of Trade Fairs, Events & Training at Zeppelin Baumaschinen GmbH. Hadwiger commented that, "After seeing the



EU/US

EU and US end their steel tariff dispute

Leaders plan to work together - and Joe Biden takes aim at China's 'dirty' steel

The US and the European Union (EU) have ended a dispute over steel and aluminium tariffs and said they would work on a global arrangement to combat "dirty" production and overcapacity in the industry, according to a news report from Reuters.

The future EU-US arrangement will be a challenge for China, which produces more than half of the world's steel and which the EU and US accuse of creating overcapacity.

"The United States and the European Union have reached a major breakthrough that will address the existential threat of climate change while also protecting American jobs and American industry," President Joe Biden told reporters in Rome in a joint event with European Commission head Ursula von der Leyen.

In a factsheet, the White House said, "Together, the United States and European Union will work to restrict access to their markets for dirty steel..."

Speaking to the press, Biden was more explicit, saying the arrangement with the EU would help "restrict access to our markets for dirty steel from countries like China." **ce**



Joe Biden and Ursula von der Leyen shake hands after speaking about steel and aluminium tariffs

IMAGE COURTESY REUTERS/KEVIN LAMARQUE

NEWS IN BRIEF

SLOVENIA TUNNEL WORK STARTS ON €1.2BN RAIL PROJECT

The CPG consortium has started excavation work on two tunnels as part of a major project to construct a second railway line between Divača and Koper in Slovenia. The CPG

consortium, comprising Slovenian construction company Kolektor CPG and the Turkish firms Yapi Merkezi and Ozaltin, will construct a 1,154m-long tunnel above the Osapska valley and a 3,808m-long tunnel in Dekani, as part of its €628 million contract. Once completed, the 27km line between Divača and the coastal city of Koper, will include seven bridges, with a total length of more than 20km – some 75% of the line's length.



EUROPE ERA WARNS OF CHALLENGES FOR NON-DIGITALISED BUSINESSES

The ERA has warned that the "rapid rise in online business models" will create "significant challenges for those businesses that have not embraced new digital ways of trading," as it launches a new project to examine digitalisation in the rental sector. The association said the commercial landscape was being "transformed by the impact of digitisation and the virtual delivery of products and services. This transformation has accelerated during the Covid-19 pandemic, with physical facilities such as shops, showrooms and rental locations being either closed or severely limited in their ability to engage with customers in a traditional business model."

GLOBAL RITCHIE BROS BUYS SMARTEQUIP

Ritchie Bros has finalised its acquisition of SmartEquip, buying 100% of the equity of the technology platform for approximately US\$175 million, subject to adjustment. SmartEquip

is a parts e-procurement platform that enables customers to manage the equipment lifecycle and integrates with OEMs and dealers. Ann Fandozzi, Chief Executive Officer, Ritchie Bros. said the acquisition, first announced in late September, would enable the company "to offer asset-specific, full-lifecycle parts and service support to customers on behalf of our dealer and OEM partners."



NETHERLANDS BAM SELLS ITS GERMAN ARM

Royal BAM Group has completed the sale of its German operating company BAM Deutschland, to Zech Group and Gustav Zech Foundation. Financial details of the transaction have not been disclosed by BAM, but the Dutch construction firm says it will use the funds to pursue its plans to expand in what it calls "growth markets". It says the divestment of the company and its subsidiaries (with reported annual revenues of approximately €500 million and 750 members of staff) "will support BAM's capital ratio by a shortening of the balance sheet."

EUROPE

10 nations in drive for nuclear plants

Senior politicians from France – along with nine other EU member nations – have sent a letter to the European Commission (EC), requesting that nuclear power be recognised as a low-carbon and sustainable energy source and included in the EU's sustainable finance regulations.

Bulgaria, Croatia, the Czech Republic, Finland,

Hungary, Poland, Slovakia, Slovenia and Romania – each boasting nuclear power within its energy portfolio – joined France's call to aid the expansion of nuclear facilities.

Calling nuclear power a "key affordable, stable and independent energy source," the letter stresses the importance of EU member states' ability to reduce their reliance

on power sourced from beyond the bloc.

Currently, 90% of the EU's energy derives from outside of its borders, including a heavy reliance on Russia.

As well as citing protection from exposure to "the volatility of prices," the letter states, "Supply tensions will be more and more frequent and we have no choice but to diversify our supply." **ce**

'new trade fair conditions after coronavirus' for myself in person on site during IAA, the hope and anticipation of having an almost normal bauma 2022 are growing even more.

"The trade fair developed and implemented new and forward-looking concept ideas."

Bauma is being held in Munich, Germany, from October 24 to 30, 2022. The trending topics for the event are: The road to zero emissions, Digital construction site, Construction methods and materials of tomorrow, The road to autonomous machines and Mining.



HUNGARY

Hungary to host Europe's first 5G railway hub

Latest communications technology will allow remote control of onsite equipment

Hungary is set to host Europe's first railway terminal with a private 5G network. The East-West Gate Intermodal Terminal (EWG), set to be Europe's largest smart railway logistics terminal, is being built on an 85 hectare site in Fenyestitke, close to Hungary's border with Ukraine.

Vodafone Hungary and a Hungarian subsidiary of the Chinese telecoms giant Huawei, have signed an agreement to supply the terminal's 5G network, which will facilitate internal communications, as well as the remote operation of equipment on site, including gantry cranes.

According to a report from the Xinhua News Agency, the 5G technology will enable the terminal to handle approximately one million containers per year, when the project is completed in the first quarter of next year.

The normal track section and the corresponding railway overhead contact line and spatial lighting system have reportedly been completed, while the wide-gauge track connection and related telecommunications works are yet to be built.

Development on the existing marshalling track network is also still to be undertaken, as well as the construction of approximately 500,000m² of warehouses, plus assembly and production plants. **ce**



Impression of a gantry crane loading containers at the proposed EWG terminal

UK

Onshore construction completed for Triton Knoll

All major onshore electrical system construction work has been completed for the UK's €2 billion Triton Knoll offshore wind farm, according to the lead developer, RWE.

The scope of work, which began in September 2018, included the installation of 57km of 220kV underground cable, running from the farm's landfall near Anderby Creek to its recently completed substation near Bicker Fen in Lincolnshire.



The long cabling project was undertaken by construction and engineering firm J Murphy & Sons, with Siemens Energy responsible for the

installation of a 400kV cable, required to connect the wind farm's energy to the UK national grid.

Siemens was also tasked with the construction of the wind farm's onshore

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Final speaker for construction tech webinar announced

Free to attend webinar will examine impact of and opportunities for data on the industry



David Swan, vice president of products at Trackunit, has been announced as the third and final panellist for Construction Technology's upcoming webinar, Defining Construction 4.0, which will take place on November 16 at 3.00pm UK time.

Swan drives strategic product initiatives and product-led transformations globally for Trackunit and has comprehensive knowledge about digital transformation through his experience from within an OEM and his work in industry steering committees. He is committed to the purpose of eliminating downtime in the construction industry and, before joining Trackunit, led the development of Skyjack's award-winning connected machine solution ELEVATE.

The webinar will seek to define construction 4.0 and what it actually means to construction businesses. It will examine how drones, AI, VR and robotics - as well as more traditional construction tools - can be brought together, through the use of data, to provide much-needed productivity and efficiency boosts.

Swan joins two other panellists for the webinar, Koti Vadlamudi, Senior Vice President Advanced Facilities (AF), at engineering group Jacobs and Roz Buick, Senior Vice President in Oracle's Construction & Engineering business.

Registration for this webinar is free and available at www.khl.com

Wind turbines at Triton Knoll began producing electricity earlier this year

and offshore substations. RWE, which jointly owns the project with J-Power and Kansai Electric Power, leads on the wind farm's construction, as will also manage its

long-term operation and maintenance.

Triton Knoll generated its first electricity in February 2021 and announced the completion of turbine installation in September.

Once fully operational, it will generate electricity to meet the needs of around 800k homes. **ce**



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WORLD IN BRIEF

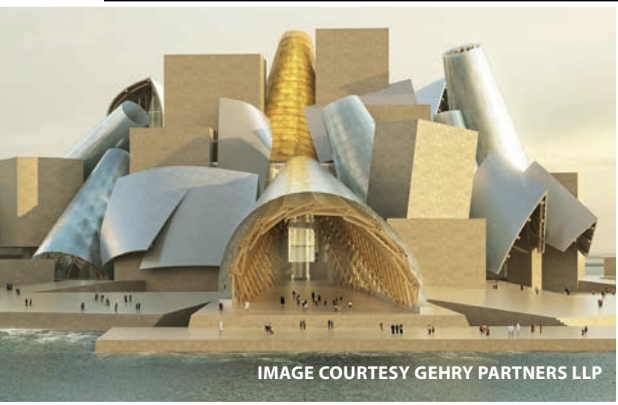


IMAGE COURTESY GEHRY PARTNERS LLP

ABU DHABI

The main construction contract for the Guggenheim Abu Dhabi museum has been awarded to a joint venture between Six Construct, a subsidiary of BESIX Group, and Trojan General Contracting LLC, a subsidiary of Alpha Dhabi Holding. The joint venture contract includes all construction work, except for the foundations, which have already been completed. The building is made of various materials, including steel, concrete, wood and aluminum. This museum, which is located on Saadiyat Island and borders on the Arabian Gulf on three sides, will be the largest of the four Guggenheim museums (New York, Venice and Bilbao).

GLOBAL

The world's leading cement and concrete manufacturers have made a global commit to cut CO₂ emissions by a further 25% by 2030, marking a decisive step in the race to 'Net Zero' concrete by 2050. The move by 40 members of the Global Cement and Concrete Association (GCCA) marks the biggest global commitment by an industry to net zero so far – bringing together companies from the Americas, Africa, Asia, including India and China, and Europe. GCCA members account for 80% of the global cement industry volume outside of China, and also include several large Chinese manufacturers.



KOREA

Hyundai Doosan Infracore has released its third quarter financial results, revealing that while sales grew, its operating profit plummeted by 47%. The company attributed this fall in its earnings before interest and taxes (EBIT) to slowing demand in China and rising cost pressures, although the company did say that it expected this to be the low point, and for this figure to gradually recover. Construction equipment sales in China fell by 61% in the third quarter of the year. The company said that this was due to the, "slowing down in new construction projects as the Chinese government is strengthening environmental regulations and safety diagnosis."

ISA is examining solar energy's potential for less developed countries



GLOBAL

US\$1 trillion plan to build solar energy plants

International Solar Alliance working to mobilise investment for "massive deployment" of solar technologies

At a general assembly of the International Solar Alliance (ISA) the Solar Investment roadmap for 2030 was discussed – the roadmap seeks to build US\$1 trillion worth of solar power plants over the next ten years.

The fourth general assembly of the ISA also talked about the potential of having a single global grid for solar power.

The assembly was presided over by Shri R.K. Singh, Minister for Power, New and Renewable Energy, Government of India, and included speeches from US Special Presidential Envoy for Climate, John Kerry, and the European Commission Executive Vice President for the European Green Deal, Frans Timmermans.

"We are working towards mobilising US\$1 trillion of investment for a massive deployment of solar energy technologies and for expanding solar markets," said Dr. Ajay Mathur, Director General of the ISA.

"This would help achieve three different but interlinked objectives: promoting a clean energy transition; enabling energy access and energy security; and delivering a new economic driver for all countries"

The ISA was formed by India in 2015 to help less developed countries exploit their solar potential.

ce

US

Caterpillar gets a boost as sales return to pre-pandemic levels

Cat has announced Q3 2021 sales and revenues of US\$12.4 billion, a 25% increase on the US\$9.9bn it made during the third quarter of 2020.

The company, which recently appointed its first chief sustainability and strategy officer, said its sales were driven by a higher demand for equipment and services from end-users, as well as "favorable price realisation."

While the third quarter of 2020 saw the manufacturer's sales and revenues of US\$9.9 billion drop by 23% on the US\$12.8bn it brought in during the third quarter

of 2019, this year's 25% increase suggests the company has rebounded after the losses it - and the wider construction industry - suffered during the height of the pandemic.

Cat's Construction Industries business segment achieved total sales of US\$5.25bn for

the third quarter of 2021, which is an increase of US\$1.19bn, around 30%, more than the US\$4.05 billion it made for the same period in 2021.

Jim Umpleby, Chairman and CEO at Caterpillar, said, "Our global team continues to execute our long-term strategy for profitable growth while working to mitigate supply chain challenges as we serve our customers. Our third-quarter results reflect higher sales and revenues across our three primary segments."

ce



Jim Umpleby, chairman and CEO of Caterpillar

AUSTRALIA

Three consortiums shortlisted for Sydney Metro airport project

Winning bidder to build six new metro stations as part of US\$8bn contract

Three consortiums have been shortlisted to deliver key construction work on the Sydney Metro – Western Sydney Airport project.

The consortiums shortlisted for the Stations, Systems, Trains, Operations and Maintenance (SSTOM) are Bradfield Metro, Parklife Metro and WestGo.

The Sydney Metro – Western Sydney Airport project will support 14,000 construction jobs, including 250 apprentices.

The total project cost will be around AUD\$11 billion (US\$8.2 billion).

The winning team will build six new metro stations and elements of the surrounding precincts, the stabling and maintenance facility, provide rail infrastructure and systems required for the supply, commission and operations of the new trains, and run the line when operational.

The SSTOM package is the third major contract package to be procured for the project.

The contract is expected to be awarded at the end of 2022.

ce



Impression of Sydney Metro airport terminal

INDONESIA

Construction work is underway on the US\$2 billion Lido City

Developer MNC Land has started construction on a US\$2 billion “world-class entertainment hospitality city” in Indonesia.

Situated in the Bogor area to the south of Jakarta, the 3,000 ha (30km²) Lido City project comprises the construction of a movie production complex, a golf course, a luxury hotel resort, a music and arts centre and a theme park with six adventure areas.

It was signed off in June 2021 by the President of the Republic of Indonesia, Joko Widodo, and has been named as a Tourism Special Economic Zone and, according to MNC, will “significantly contribute to the country’s foreign exchange earnings”, both through investment opportunities and tourism.

The developer said, “Lido City is set to attract



local and international tourists, to absorb six-seven million visitors per year in the next five years.

“Foreign exchange inflows from foreign tourists and savings on foreign exchange

Plan for Lido City includes film studios, theme park, golf course and a luxury resort

outflows from domestic tourists, who would prefer SEZ MNC Lido City to travel abroad, are predicted to reach US\$4.1 billion over 20 years.”

Lido City’s luxury villas, resort and 18-hole golf course will be operated by the Trump Organisation.

ce

WORLD IN BRIEF



US

Oracle Textura Payment Management Cloud Service has revealed that it has been used to manage subcontractor payments on construction projects valuing US\$1 trillion. This milestone represents work on more than 78,000 projects since Textura first launched in 2006. The system is used by general contractors, owners, and subcontractors of all sizes improve efficiency and mitigate payment and compliance risk by processing approximately US\$9 billion in monthly payments.

SAUDI ARABIA

Aecom has announced a partnership with the Royal Commission for AlUla (RCU) for a US\$15 billion regeneration of the ancient city in Saudi Arabia. Phase one of the project will regenerate the Saudi Arabian city of AlUla’s core 20km historical area, which will include key projects in infrastructure, hospitality, arts and culture, and social and community development. Aecom will create a Lead Design Office responsible for all infrastructure design activities from setting standards, delivering the digital ecosystem, leading innovation, managing designers, delivering scopes and supporting the realisation of a carbon-neutral strategy and circular economy.

AUSTRALASIA

Long lead times and rising freight costs are placing pressure on construction markets, amid ongoing supply constraints and labour shortages in Australia and New Zealand, according to a report from consultant Townsend and Townsend. The report on Australia and New Zealand found that global supply chain issues caused by surging demand, supply shortages and supply bottlenecks continue to push up the cost of key building materials such as steel, timber and electrical materials. This is placing further pressure on Australia and New Zealand’s already constrained construction markets.

'Self-learning' wheeled loader from Volvo CE

The fully autonomous, battery-electric prototype wheeled loader, LX03 by Volvo Construction Equipment (Volvo CE), is said to be the first real-world example of a self-learning concept wheeled loader with the intelligence to make decisions, perform tasks, and interact with humans.

While not commercially available, engineers expect that insights from the LX03 will feed into future applications.

Inspired by a concept devised by Volvo CE and LEGO Technic engineers and designers, the LX03 represents both the next stage in Volvo CE's exploration into machine intelligence and its determination to decarbonise the construction industry.

Melker Jernberg, President of Volvo CE, said, "We need to transform the construction industry with smart and more sustainable solutions that will have an impact on a global scale. The unveiling of the LX03 prototype today represents just that."

The five tonne wheeled loader has been developed as a modular concept, with the capability of being made larger or smaller with just one or two changes to the manufacturing process. It shares its driveline with the L25 Electric, making it a zero emission, low-noise machine with a runtime of up to eight hours depending on its application.

It is said to have the capacity to adapt to different scenarios, make decisions in real-time and collaborate with humans. It can be programmed by customers to complete heavy, repetitive or dangerous tasks, reducing the need for a human on site.

Lars Stenqvist, chief technology officer of Volvo Group, said, "As transport and infrastructure leaders we have a vital role to play in taking action on climate change and stepping up the pace of innovation needed to deliver on emissions targets."



Volvo CE says the LX03 can make decisions in real time and collaborate with humans



JCB chairman Lord Bamford with the company's latest hydrogen-powered presentation

JCB signs multi-billion-euro hydrogen deal

British equipment manufacturer agrees to purchase a tenth of all the green hydrogen made by Australian energy firm FFI

JCB has signed a deal said to be worth billions of euros, to buy green hydrogen from Australian energy company Fortescue Future Industries (FFI).

The purchase will make FFI the UK's largest supplier of the clean fuel, while driving forward JCB's plans to launch hydrogen-powered construction equipment onto the market.

JCB chairman Lord Anthony Bamford told the BBC that pursuing the use of green hydrogen in the construction industry was "the right thing to do".

The company will buy 10% of FFI's total green hydrogen output and manage its distribution of the hydrogen to customers within the UK, in partnership with Ryze Hydrogen, a company founded by Lord Bamford's son.

In what is seen as a call to the UK government to develop infrastructure for the fossil fuel-free energy, Lord Bamford said, "It's fine having an engine powered by green hydrogen, but no good if customers can't get green hydrogen to fuel their machines."

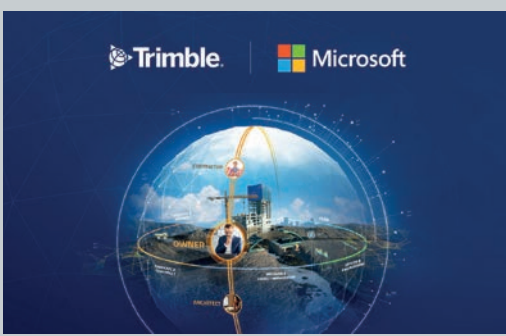
CE recently reported that JCB is investing heavily in hydrogen engines and aims to have its first hydrogen-powered machines on the market by the end of next year.

Launching the company's first hydrogen-powered telehandler earlier this month, Lord Bamford said, "This is a major advance on the road towards making green hydrogen a viable solution."

ce

We should have controlled equipment access





Trimble and Microsoft to build Construction Cloud

Trimble and Microsoft have announced a strategic partnership to accelerate the digital transformation of construction by building the Trimble Construction Cloud powered by Microsoft Azure.

By leveraging the Microsoft cloud, the two companies will collaborate to develop, build and deliver industry cloud platforms and solutions that connect people, technology, tasks, data, processes and industry lifecycles.

Bryn Fosburgh, senior vice president, Trimble Navigation, said, "We're really wanting to create an industry platform with a set of point solutions across the different industries we represent. In construction you have estimating, earthmoving, project management, and so on.

"What the cloud has given us is kind of a palette – like an artists' palette with all of the paint on there – and we can now intermingle those colours, those solutions, for a more integrated workflow."

This partnership expands Trimble and Microsoft's existing relationship – the two worked together on the Hololens – to combine the Microsoft cloud with Trimble's construction solutions and industry knowledge.

Hyperloop has now become part of EU's sustainability plans

European Commission invests €15 million in latest plans for 'green' transport network

The European Commission (EC) has agreed to invest €15 million in development plans that could ultimately result in the creation of a 10,000km-long pan-European hyperloop network.

The new funding will be used by Dutch engineering company Hardt for research and development in the super-high-speed transport concept.

The plan initially involves the proposed construction of a pilot freight route in the Netherlands, between Rotterdam and Amsterdam – which Hardt hopes to have operational before the end of this decade.

The funding will also aid the development of the European Hyperloop Center in Groningen – an innovation hub where Hardt aims to demonstrate lane switching technology for the hyperloop system.

The technology of hyperloop sees vehicles travel through low-pressure tubes, powered by an electromagnetic propulsion system at speeds of up to 1,000km/h.

The EC believes that if the carbon-neutral transport system could be rapidly expanded, it has the potential to help Europe achieve its 2050 emission reduction goals.

Tim Houter, co-founder of hardt hyperloop, said, "It's great to have now gained the trust of the European Commission. Their support will help to accelerate the development of a European hyperloop network, bringing us much closer to significant CO₂ savings. European cities will be connected smarter, faster and cheaper." **ce**

Impression of the proposed Hardt Hyperloop

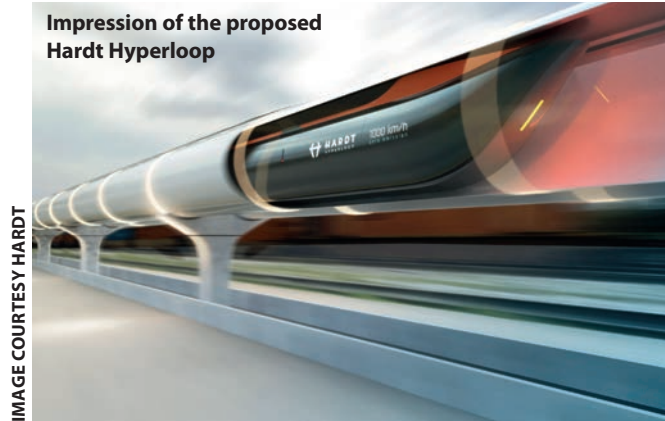


IMAGE COURTESY HARDT

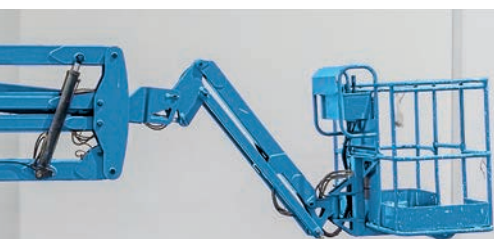
New digital operating concept from Kleeman

Kleeman has added an extension to its digital operating concept so all relevant process information and reporting are now displayed on a smartphone, meaning no one has to leave the feeding device. The company said the extension to SPECTIVE makes it the sector leader regarding user interfaces. The plant is started via the touch panel directly at the plant and, once it has been set, runs in automatic mode. When

a plant train is used, the operator can connect to the complete plant train, not just each individual plant.

As a new feature, the radio remote controls have been integrated. Using the large radio remote control, the plants are moved from the low loader and the set-up procedure can be carried out at a safe distance.

Kleeman's new digital operating concept



before we had an accident.

Control. The narrative.



Access Control.

ZTR

Positive outlook

This article will assess the period for listed contractors, equipment manufacturers and material producers from week week 40 to week 44 of 2021 (1-29 October, 2021).

Each of the CE indexes has made a positive move this month, with the Equipment

index up 5.6%, Contractors up 3.3% and Materials up 3.0%.

CONTRACTORS

The Contractors list is something of a mixed bag, with as many positives as negatives, but an overall positive picture.

Europe's largest contractor,

Confidence boost with all indexes moving back into the black

Vinci, shows a solid rise of 4.4%; a good performance given the difficulties it has faced during Covid, with its airport and toll road concessions.

While Sweden's Peab sits at the top of the list with an impressive rise of 18.6% on the index, two Spanish companies are close behind; Sacyr rises 17.1% and Acciona is up 16.7%.

In fact, of the eight Spanish companies on the index, six have posted positive results, with only ACS (-2.2%) and Tecnicas

Reunidas (-5.0%) falling short. This continues Spain's positive showing, as it also had five companies in the top seven spots on last month's index.

From a regional perspective, trends are hard to define, although the UK has not fared as well as other European nations; with five companies on the index, the highest placed, Taylor Wimpey (0.1%), is the only company in positive figures. Kier sits second from bottom, with a fall of -10.0%.

EQUIPMENT MANUFACTURERS 5.6% ↗					
Company	Currency	Price at start	Price at end	Change	Change (%)
CEE INDEX		473.5	500.0	26.5	5.6%
Astec Industries	US\$	53.81	53.38	-0.4	-0.8%
Atlas Copco (A)	SEK	525.60	551.80	26.2	5.0%
Bell Equipment	ZAR	13.80	12.20	-1.6	-11.6%
Caterpillar	US\$	191.97	204.01	12.0	6.3%
CNH Industrial	€	16.61	17.11	0.5	3.0%
Deere	US\$	335.07	342.31	7.2	2.2%
Doosan Infracore	WON	9,150.00	10,500.00	1350.0	14.8%
Epiroc (A)	SEK	153.07	182.50	29.4	19.2%
Haulotte Group	€	5.62	5.00	-0.6	-11.0%
Hitachi CM	YEN	3,105.00	3,625.00	520.0	16.7%
Hyundai CE	WON	40,650.00	40,250.00	-400.0	-1.0%
Kobe Steel	YEN	666.00	670.00	4.0	0.6%
Komatsu	YEN	2,651.50	2,966.50	315.0	11.9%
Kubota	YEN	2,333.00	2,422.50	89.5	3.8%
Manitou	€	28.70	29.45	0.8	2.6%
Manitowoc	US\$	21.42	21.43	0.0	0.0%
Metso Outotec	€	7.78	8.68	0.9	11.6%
Palfinger	€	37.20	38.20	1.0	2.7%
Sandvik	SEK	197.90	217.50	19.6	9.9%
Tadano	YEN	1,135.00	1,241.00	106.0	9.3%
Terex	US\$	42.10	44.80	2.7	6.4%
Volvo (B)	SEK	192.64	199.92	7.3	3.8%
Wacker Neuson	€	24.58	28.36	3.8	15.4%

Period: Week 40-44, 2021

MATERIALS PRODUCERS 3.0% ↗					
Company	Currency	Price at start	Price at end	Change	Change (%)
CEM INDEX		231.1	238.1	7.0	3.0%
Buzzi Unicem (Ord)	€	19.41	20.17	0.8	3.9%
Cemex (CPO)	MXP	14.89	13.24	-1.7	-11.1%
CRH	UK£	40.13	41.48	1.3	3.4%
HeidelbergCement	€	63.54	65.14	1.6	2.5%
Ferguson	UK£	102.20	109.95	7.8	7.6%
Kone (B)	€	60.02	58.96	-1.1	-1.8%
Holcim	€	41.18	43.29	2.1	5.1%
Saint-Gobain	€	56.47	59.56	3.1	5.5%
Schindler (BPC)	CHF	237.20	234.80	-2.4	-1.0%
Schneider Electric	€	141.96	148.90	6.9	4.9%
Titan Cement Int. (Common)	€	14.32	15.08	0.8	5.3%
Vicat Group (Common)	€	38.00	36.85	-1.2	-3.0%
Wienerberger	€	28.90	30.62	1.7	6.0%

Period: Week 40-44, 2021

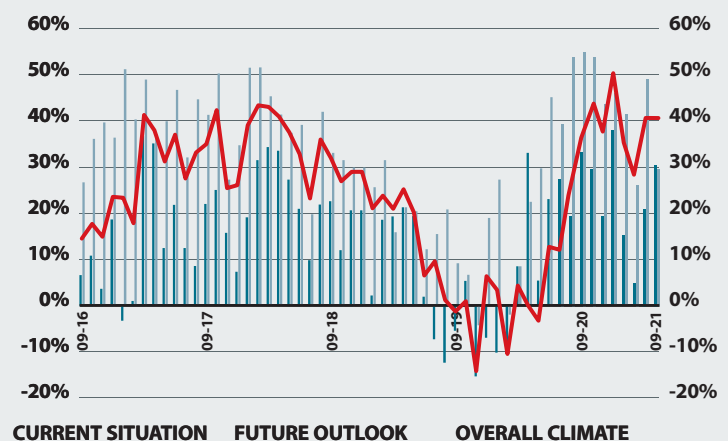
CE BAROMETER Healthy climate, but concerns over continued recovery

The September 2021 barometer survey was undertaken during the first two weeks of October.

As an overview, there appears to be a levelling off of growth, and, while business is clearly better now than it was a year ago, optimism about the future is tempered with concerns about new challenges, including the well-reported supply chain issues and materials shortages.

This month, the balance figure (difference between those reporting positive and negative movement between August and September 2021) stands at 30.9%, up almost 10% on the previous survey.

While the percentage of respondents seeing an improvement in business remains the same as in the previous month, the number seeing a drop in business has basically halved (down to 10.3% from 20%).



returns

At the bottom of the table sits Austria's Porr, which has seen a decline of -20.2%.

EQUIPMENT

The Equipment index has generally performed very well this month, with 18 of the 23 companies ranked posting positive figures, plus one non-mover, the US-based Manitowoc.

No fewer than six companies have enjoyed double-digit rises, with Sweden's Epiroc at the top of the list, posting a gain of 19.2%. The company has recently completed acquisitions in the fields of mining and electromobility, which has perhaps had a positive impact on

its share price.

Caterpillar is always a bellwether, not only for equipment manufacturers, but for the industry as a whole. In this month's index, the construction giant is solidly placed with a gain of 6.3%. The company recently announced its third quarter results, with revenues up 25% on the same period in 2020.

Cat's chairman and CEO Jim Umpleby, said, "Our global team continues to execute our long-term strategy for profitable growth, while working to mitigate supply chain challenges as we serve our customers."

"Our third-quarter results reflect higher sales and revenues across our three primary segments and in all regions."

Another solid performance comes from Korea's Doosan Infracore, in which compatriot group Hyundai Heavy Industries recently took a controlling interest.

After a hesitant start to life under HHI, Infracore's 14.8% rise on the index is a good sign for the short-term future of the company.

Only two companies on the index have posted results below -1.0%. They are French access equipment manufacturer Haulotte Group (-11.0%) and South African articulated dump truck specialist Bell Equipment (-11.6%).



The CEE index has generally performed very well this month, with 18 of the 23 companies ranked posting positive figures."

CE SEPTEMBER SURVEY RESULTS

Looking back to the same time a year ago, the number seeing a drop in business is now down to just 7.4% of respondents – a clear indication that the worst of Covid is behind us. Again, though, there is an increase in the percentage of respondents reporting a stabilisation of business, as opposed to continued growth.

Nonetheless, an impressive 69.1% of respondents are enjoying healthier business levels than they were last year.

Having seen a number of false starts, however – and no doubt concerned about supply chain and recruitment issues – respondents are understandably circumspect about the future.

TAKE PART

The survey, which takes just one minute to complete, is open to all construction professionals currently working in Europe.

■ See www.construction-europe.com/ce-barometer for more info.

CONTRACTORS						3.3% ↑
Company	Currency	Price at start	Price at end	Change	Change (%)	
CEC INDEX		257.0	265.5	8.4	3.3%	
Acciona	€	141.10	164.60	23.5	16.7%	
ACS	€	23.13	22.63	-0.5	-2.2%	
Balfour Beatty	UK£	2.70	2.54	-0.2	-6.1%	
Bam Group	€	2.73	2.51	-0.2	-8.1%	
Bauer	€	11.06	11.24	0.2	1.6%	
Bilfinger	€	29.82	30.36	0.5	1.8%	
Bouygues	€	35.32	35.00	-0.3	-0.9%	
Eiffage	€	86.14	88.96	2.8	3.3%	
FCC	€	10.38	11.02	0.6	6.2%	
Ferrovial	€	24.88	27.26	2.4	9.6%	
Hochtief	€	68.30	66.70	-1.6	-2.3%	
Keller Group	UK£	9.43	9.17	-0.3	-2.8%	
Kier	UK£	1.18	1.06	-0.1	-10.0%	
Morgan Sindall	UK£	23.13	22.75	-0.4	-1.6%	
Mota Engil	€	1.37	1.35	0.0	-1.5%	
NCC (B)	SEK	138.50	150.00	11.5	8.3%	
OHL	€	0.63	0.70	0.1	11.1%	
Peab (B)	SEK	90.80	107.70	16.9	18.6%	
Porr	€	15.54	12.40	-3.1	-20.2%	
Sacyr	€	2.10	2.46	0.4	17.1%	
Skanska (B)	SEK	219.40	218.00	-1.4	-0.6%	
Strabag SE	€	38.75	37.10	-1.7	-4.3%	
Taylor Wimpey	UK£	1.54	1.54	0.0	0.1%	
Tecnicas Reunidas	€	8.23	7.82	-0.4	-5.0%	
Trevi Group	€	1.11	1.02	-0.1	-8.1%	
Veidekke	NOK	106.80	121.60	14.8	13.9%	
Vinci	€	88.44	92.37	3.9	4.4%	
Webuild (formerly Salini Impregilo)	€	2.17	2.14	0.0	-1.4%	
YIT	€	4.54	5.10	0.6	12.3%	

Period: Week 40-44, 2021

MATERIALS

Generally, it has been a good month for materials producers, with the UK's Ferguson performing best (7.6%), ahead of Austria's Wienerberger (6.0%).

The Switzerland-headquartered cement producer Holcim posts a 5.1% increase on the index, which almost precisely matches its 5.0% growth in net sales.

Again, there are only four companies with negative results.

There are three in Europe: Switzerland's Schindler (-1.0%), Finland's Kone (-1.8%) and France's Vicat Group (-3.0%).

The other is Cemex. The Mexican giant's position, rooted to the bottom of the index, with a negative result of -11.1%, is somewhat at odds with its latest financial results, which include an 8% growth in net sales, driven, according to the company, by higher volumes and solid pricing performance. **CE**

KEY INDEXES					4.3% ↑
Index	Beginning of period	End of period	Change	Change (%)	
CEE (Equipment)	473.5	500.0	26.5	5.6%	
CEM (Materials)	231.1	238.1	7.0	3.0%	
CEC (Contractors)	257.0	265.5	8.4	3.3%	
CET (Total)	311.5	324.8	13.3	4.3%	
Dow	33,844	35,820	1,976	5.8%	
FTSE 100	7,028	7,238	210	3.0%	
Nikkei 225	28,771	28,893	122	0.4%	
CAC 40	6,467	6,830	364	5.6%	
DAX Xetra	15,120	15,689	569	3.8%	

Period: Week 40-44, 2021

Construction skills key to green revolution

No one can say the past 18 months have been easy. In addition to a global pandemic, each country has also had to deal with its own trials.

For the UK, the ongoing effects of Brexit – its departure from the European Union – have left the construction sector struggling with skills and worker shortages, as many foreign workers have returned to the continent.

Additionally, new low carbon initiatives and a new £650 billion (€760 billion) infrastructure and construction plan, means that contractors are now in a catch-22 situation. Yes, the extra government spending is good. Yes, more environmentally friendly construction is good. But after an extremely difficult year, many contractors – particularly small and medium sized firms struggling with rising material, energy and wage costs – are wondering; 'how are we going to deliver all this?'

With a new net zero strategy now in place, Leila Steed views the challenges for construction in a post-Covid, post-Brexit UK, as it moves towards a low carbon future

GOVERNMENT SPENDING

At the time of writing this article, the UK Government had just published its Net Zero Strategy, outlining how the country would meet the carbon emissions targets set out in the Paris Agreement.

Said to build on the Ten Point Plan for a "Green Industrial Revolution" that was published by Prime Minister Boris Johnson in November of 2020, the Net Zero Strategy aims to ensure the country's "biggest polluters pay the most for the transition" and to deliver "deep cost reductions in low carbon tech" for businesses.

Also included in the strategy are plans for "how the UK will secure 440,000 well-paid jobs and unlock £90 billion in investment by 2030".

Prime Minister Boris Johnson, says, "The UK's path to ending our contribution to climate change will be paved with well-paid jobs, billions in investment and thriving green industries – powering our green industrial revolution across the country."

While Business and Energy Secretary, Kwasi Kwarteng, says the plan would "future-proof industries", many construction industry leaders say its full impact on the construction industry is still unclear and have criticised the strategy's lack of detail.

NET ZERO STRATEGY'S IMPACT

Suneeta Johal, CEO of the UK-based Construction Equipment Association, says, "As it currently stands, construction equipment doesn't feature in the government's carbon budget until around 2035, so we are hoping there will be changes in that respect once the detail is published."

Johal also commented on the UK Treasury's Autumn Budget and Spending Review 2021.

Suneeta Johal, Chief Executive of the Construction Equipment Association



Renovating the Palace of Westminster

Further highlighting the country's need for specialist skills, a structural survey of the UK's Houses of Parliament has revealed that the building has "thousands of structural issues".

The survey, which took over 50 expert engineers, architectural surveyors, ecologists and acoustics and lighting specialists "thousands of hours" to carry out, was undertaken as part of "essential restoration" plans for the Palace of Westminster.

The survey team spent around 4,700 hours examining 2,343 areas of the building – some parts of which date back over 900 years.

The examination of 1,100 rooms, 100 staircases, 128 plant rooms and three miles of passageways found that the building's seven miles of steam pipes and 250 miles of cabling, all need to be stripped out.

In addition to the building's extensive electrical, ventilation, heating and mechanical systems also being significantly outdated, other defects include issues with the building's historical features.

Many of its 3,000 original windows, including its famed Victorian stained-glass windows, were found to be "warping and sagging due to age".

Classed a UNESCO World Heritage Site, the Palace of Westminster has for some time been listed as being at "high risk of sudden failure from fire, flooding or stone fall".

Over 40,000 problems with the building have been reported since 2017 alone and the continual maintenance needed to just keep the building running already costs around £2 million a week.

Part of an extensive investigation into the building's condition, the survey is the latest of a raft of inspections that will be used to create a detailed schedule of works for Restoration and Renewal Programme.

Upon the completion of "even more detailed surveys" next year, planning and preparation works to safeguard the building's historic collections will then begin.





According to Construction Skills Network, the UK will need an additional 215,000 workers by 2025, just to meet demand

IMAGE: © ADOBE STOCK

Contractors shortlisted for eco-friendly HS2 interchange

Laing O'Rourke Construction, Skanska Construction UK and a joint venture company called Unity, comprising Sir Robert McAlpine and VolkerFitzpatrick, have been announced as the shortlisted bidders by HS2 Ltd for a £370 million railway interchange station contract.

The companies are now invited to tender for the £370 million design and build contract, which is due to be awarded in 2022.

Andrew Cubitt, HS2's procurement and supply chain director, says, "Congratulations to the organisations who have been shortlisted for this significant HS2 contract, which will not only boost jobs in the Midlands, but will open up fantastic supply chain opportunities for businesses right across the country."

Located north-west of London near Birmingham, it is believed the new Solihull Interchange Station will be the "first railway station globally to achieve the BREEAM 'Outstanding' certification at the design stage".

HS2 Ltd, which is working with specialist design company Arup, says it is aiming for the infrastructure asset to be net zero carbon in its operation, and the most sustainable railway in the world.



(L-R) Boris Johnson, Joe Biden and the UN's Antonio Guterres at the COP26 Conference in Glasgow

Association of Independent Professionals and the Self-Employed, says, "Whilst the Treasury's announcement that it will be increasing spending by £3.8bn to fund the skills revolution is welcomed, it's not enough and fails to address just where the workforce will come from".

Despite the concerns around these practicalities, there is also enthusiasm about the opportunities that meeting the emissions challenge will create.

Indeed, a recent survey targeting 40,000 construction and infrastructure supply chain partners found that 74% of respondents thought the UK Government's push for Net Zero was a positive opportunity for their

business, with only 13% viewing it as a risk.

The 'Greening the Chain' survey was carried out by leading construction company Balfour Beatty and the Supply Chain Sustainability School, between June and August of this year.

Published ahead of the United Nations' COP26 climate change conference, it aimed to promote more industry collaboration in the drive to meet climate goals.

Alok Sharma, COP President-Designate, Alok Sharma said, "The UK continues to show climate leadership as we publish our roadmap to net zero by 2050. It shows the wealth of opportunities, including thousands of new skilled jobs, that a transition to a green economy can herald".

SUSTAINABLE INFRASTRUCTURE AND ENERGY INVESTMENT

Despite the small geographical size of the UK, it is already home to two of the biggest infrastructure projects in the world – the Hinkley Point C nuclear power plant and the HS2 high speed railway network expansion.

Additionally, in September of this year the UK Government announced its National Infrastructure and Construction Pipeline document for 2021, which set out a plan for £650 billion (€762 billion) of investment in infrastructure projects over the next 10 years.

The largest share of the investment has been earmarked for the transport sector, which will receive some €82 billion between now and 2025, with energy projects potentially accounting for more than €60 billion over the same period.

The document also includes a forecast of the >

Specialist regeneration contractor U+I trialled the use of Concretene on what will be a new public attraction in Manchester



© MARK WAUGH



The €1.7 billion Mayfield Regeneration Scheme in Manchester aims to enhance Manchester's industrial heritage, as well as provide a "green lung" for the city

workforce demand that could be generated by the investment plan, estimating that 425,000 new jobs could be created.

Commenting on it, Helen Yeulet, director of training and skills at the Building Engineering Services Association (BESA), says, "The government's infrastructure plans are extremely exciting, but will place even greater strain on the industry's workforce unless accompanied by a colossal push to bring new blood into the sector and upskill existing workers."

She adds, "People shortages are likely to continue for an extended period. This is not just about Brexit. We have seen a whole shift in the economy, which was accelerated by the pandemic and has led to record pay packages for people working in transport, logistics and hospitality.

Adding to this, the demand for specialist technology and energy orientated construction skills will continue to rise, as development of energy projects such as Hinkley Point C nuclear power plant in Somerset and the Dogger Bank Wind Farm – which is being built 130km off the north-east coast of England – continue at pace.

While the Pipeline document highlighted the need for more modern methods of construction (MMC), the new Net Zero Strategy allocated £500 million (€590 million) towards developing green technologies and materials of the future.

LOW CARBON MATERIALS

This will likely aid companies in the development of materials like Concretene



Hinkley Point C – five years on

In the five years since work began on the £23 billion (€26.6 billion) nuclear plant, the project has seen the installation of "the largest land-based crane in the world", Big Carl, and the use of the biggest TBM ever used on a UK rail project.

Works at Hinkley Point C, which include the construction of two new nuclear reactors for energy provider EDF Energy, have so far resulted in 3,600 British companies securing contracts on the project.

In addition to major contractors such as Balfour Beatty, Kier, BAM, Bouygues and Laing O'Rourke, more than 400 businesses in the North of England have also been contracted to work on the nuclear plant.

This has so far contributed around £1.2 billion (€1.4 billion) to the region's economy and, by the end of the project, £18 billion (€20.8 billion) will have been spent with British businesses nationwide.

A total of 22,000 construction sector workers are currently employed by the project – 6,000 of which are based on plant's site in Somerset.

Hinkley Point C is also playing its part in helping to bring more people into the industry, with around 800 apprentices being trained on the site since the project began.

In total an estimated 74,000 people in Britain are due to work on Hinkley Point C before its completion in 2026.

– a new low-emission concrete substitute, which was recently trialled on the £1.5 billion Mayfield Regeneration Scheme in Manchester.

Described as an "enhanced concrete" and incorporating graphene, Concretene is said to be a cheaper and better performing alternative to concrete, that can cut carbon emissions by up to 30%.

The material is being used by British firm U+I; a specialist regeneration developer and one of the partner companies on the Mayfield Regeneration Scheme, to create a suspended slab floor for one of the scheme's public attractions.

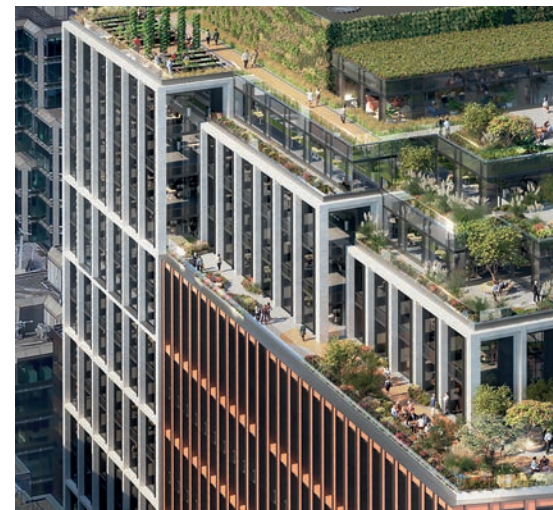
Forming a 54 x 14m mezzanine floor, it is estimated the Concretene slab will provide a CO₂ reduction of 4,265kg.

The material was developed by the University of Manchester's Graphene Engineering Innovation Centre (GEIC) and Nationwide Engineering.

According to its developers, the addition of the graphene to the concrete produces just

6.3kg of CO₂ per tonne of concrete – 21.94kg per tonne less than concrete that incorporates traditional steel reinforcement.

The incorporation of graphene, which is



Port expansion

Port authorities recently announced that the final caisson – a watertight retaining structure – for the £350 million (€410 million) expansion of Aberdeen Harbour in the UK has been installed, marking a "major milestone" in the project.

Located on Scotland's east coast, Aberdeen Harbour is a key logistical hub for the oil, gas

and offshore energy sectors and is one of the busiest ports in the country.

The North Sea port receives around 6,500 international vessel arrivals annually and its expansion will increase the capacity of the port's North Harbour, allowing it to accommodate a greater number of larger oil and cruise ships.

Weighing 8,000 tonnes and measuring 50m long and between 12 and 15m wide, the

Designs for 105 Victoria Street include an urban farm with community allotments, a cycle ramp, a 'village square', a multi-purpose arena and an auditorium for indoor sports



extracted from graphite and can also be derived from materials such as recycled plastics or biomass, means that Concretene is also claimed to cut drying time from 28 days to just 12 hours.

REGENERATION SCHEMES

Its use on the 'Mayfield Manchester' project – one of the largest regeneration schemes currently underway in the UK – is one of a number of ways the developers are seeking to improve sustainability.

Aiming to transform previously derelict parts of the city and enhance its industrial heritage, Mayfield Manchester will deliver 1,500 homes, 150,000m² of commercial space, 28,000m² of retail and leisure facilities – and what is said to be the city centre's first new park in 100 years.

Mayfield Park will span an area of 26,300m².

Its creation will involve a "massive planting operation" that will see around 120,000 plants and bulbs of 250 different species incorporated to the green space.

Described as a "green lung" for the city, the park is a key sustainable feature of the regeneration scheme.

Tracey Rawlins, executive member for environment for Manchester City Council, says, "As well as looking great, they help improve air quality, reduce flood risk and counter the effects of climate change by absorbing and storing carbon."

NET-ZERO BUILDINGS

Similarly, smaller projects in the UK capital are also being developed with sustainability as their key focus.

A case in point is a new 14-storey "ultra-sustainable" office building, known as 105 Victoria Street. It is currently being pushed forward by developer Welput – a specialist London office fund managed by BentallGreenOak (BGO).

While planning permission has not yet been granted by Westminster City Council, if approved construction of the office building will see the erection of a new structure with a ground, mezzanine and up to 14 storeys with terraces from the tenth floor to the 14th.

According to Welput, the 44,000m² office will be all-electric and its energy requirements entirely met by renewable sources.

Designed to "foster the health and wellbeing of its end users", the structure will feature a central 'Village Square' and provide 2,800m² of greenspace and terracing – including an Urban Farm.

Ker Gilchrist, who has responsibility for Welput at BGO, says, "105 Victoria Street will surpass both existing and emerging sustainability standards, achieving net zero not only in operation but in the construction, with the building becoming net beneficial to the environment after just six years of its lifespan."

With projects such as this on the increase, additional funding and opportunities for growth – and the fact that there is now no choice but to meet climate targets – the mood of the UK construction industry seems to be one of quiet but determined resolve. **ce**



newly positioned caisson was the last of 22 such blocks needed to form the new retaining quay walls of the harbour's South East Pier, North Quay and East Quay.

According to the ports' owner /operator, the Aberdeen Harbour Board, the caissons were built in La Coruna, Spain, and their installation at the port began in 2019.

The works were part funded by a €205m loan from the European Investment Bank.



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Rapid progress on site thanks to pre-assembled and ready-to-use formwork components



Falsework and formwork – two small words but behind them lie a part of the construction industry with myriad potential solutions for a host of customer requirements. Steve Ducker reports

Forming the future

While the Covid-19 pandemic paralysed the world economy for much of 2020, one of the least affected sectors was the execution of public works, especially those related to transportation. As a result, formwork services specialists such as Alsina were able to continue with projects.

One such project was the Benta Berri Metro Station in Spain. The Lugaritz-Miraconcha section of the San Sebastian underground is

scheduled to open in 2022, serving the Old Town, the universities, and downtown area.

Developed by the Basque government through the company Euskotren, this 2.1 km section of the Donostialdea Subway, or Topo as it is known by locals, has a cavern station 25m below ground, two lateral platforms, and three entrances in Benta Berri. The entrances are located at the intersection between Calle Bertsolari Salvador and Calle Pedro Manuel Ugartemendia, another in Bentaberri Plaza, and an elevator entrance on Avenida de Zarautz.

PLATFORMS ON PLATFORMS

Thanks to this project, the Topo network will go from having 9 million to 23 million annual passengers. Alsina was involved in the full construction of the underground station, including the 100m cavern, 150m of pedestrian access shafts, and other structural components needed for this type of building such as ventilation stacks, junctions, walls and columns.

The station cavern is an oval-shaped section measuring nearly 16m wide by 12m tall, with a total volume of 14,500m³ requiring 3,200m² of formwork. The concrete was poured in three stages: inverted vault, side walls, and vault. The construction process and

The Doka MT tunnel system enjoys its premiere outing on the Lochweidli project in Switzerland





Progress among the pilgrims in Lourdes

During restoration work on the bell tower of the Basilica of the Immaculate Conception, known as the Sanctuary of Our Lady of Lourdes, France, safety and the constant flow of pilgrims determined the work processes involved. Consequently, a foot-traffic management system was necessary while the scaffolding was being erected.

The vertical nature of the work and the limited space available at the foot of the Basilica meant the companies involved had to be highly organised and rigorous in their intervention procedures.

Ulma installed a lift system capable of elevating one tonne of equipment and personnel up to a height of 66m, in addition to a ladder allowing access to all levels.

The scaffolding provided storage space for material to facilitate the restoration.

The bell tower is located almost 100m above the cave, so a temporary protection zone was set up to ensure the safety of pilgrims and avoid any risk of falling rocks. To complete the protection of the site, a scaffolding net was installed on the three secondary facades and a denser net on the facade facing the square, which also served as a screen for the projection of photos or videos.

Lourdes is an area with strong wind and adverse weather conditions in winter. These characteristics were noted when calculating the scaffolding structures, which had to withstand winds of more than 100 km/h on occasions.

Ulma said that BIM (Building Information Modelling) methodology made it possible to clearly visualize the dimensions and difficulties of the work involved for a project of this type.

the length of the sections to be concreted were key aspects in the final decision: a tunnel formwork system in a rented mine.

To build the arch of the inverted vault, Alsina supplied climbing equipment that could adapt to any position with circular formwork, pouring 30m² sections a day. The side walls used one-sided wall units over 6m in height, allowing for weekly pours. Finally, for the keystone, the company designed two 6m moving trolleys to pour up to twice a week.

As well as some special custom-designed pieces, Alsina also used its One-sided wall, Multiform, Alsiply Circular and AR-80 Scaffolding systems for the support and formwork of the project.

The Alsiply Circular system for vaults allows for the perfect adjustment to the vault's geometry. The circular wall system, adapted for vault formwork is resistant, versatile and is compatible with the Multiform product family, therefore capitalising on the use of the equipment on site without the need for any special pieces. The formwork surface of the system is phenolic and therefore offers multiple advantages compared with metal surfaces, such as a lower weight, greater quality finish of the concrete, increased performance, and greater resistance to inclement weather.

TUNNEL VISION

In Switzerland, construction is underway on a tunnel as part of a bypass to relieve traffic for communities in the Toggenburg area. For Doka's formwork experts the conditions of this project have been a "baptism of fire" for the new, rentable DokaMT tunnel system.

DokaMT is a preconfigured formwork traveller, with vibrator, concrete placing boom, pipework and filler necks, including

bottom slab formwork and sealing carriages.

The Lochweidli Tunnel project in the canton of St Gallen is 305m long and principally of mining-type tunnel construction. It has two

portals at its entrance and exit points. The short route will be completed this year and will keep traffic away from the communities between Wattwil and Ebnat-Kappel as part of a longer local bypass. Doka describes it as far from business as usual.

The project depends on short assembly and fast cycle times. Also important are easy cleaning of the formwork surfaces – especially under confined conditions, generous access openings for construction traffic, and a construction method that flexibly reflected the cross-section of the building space.

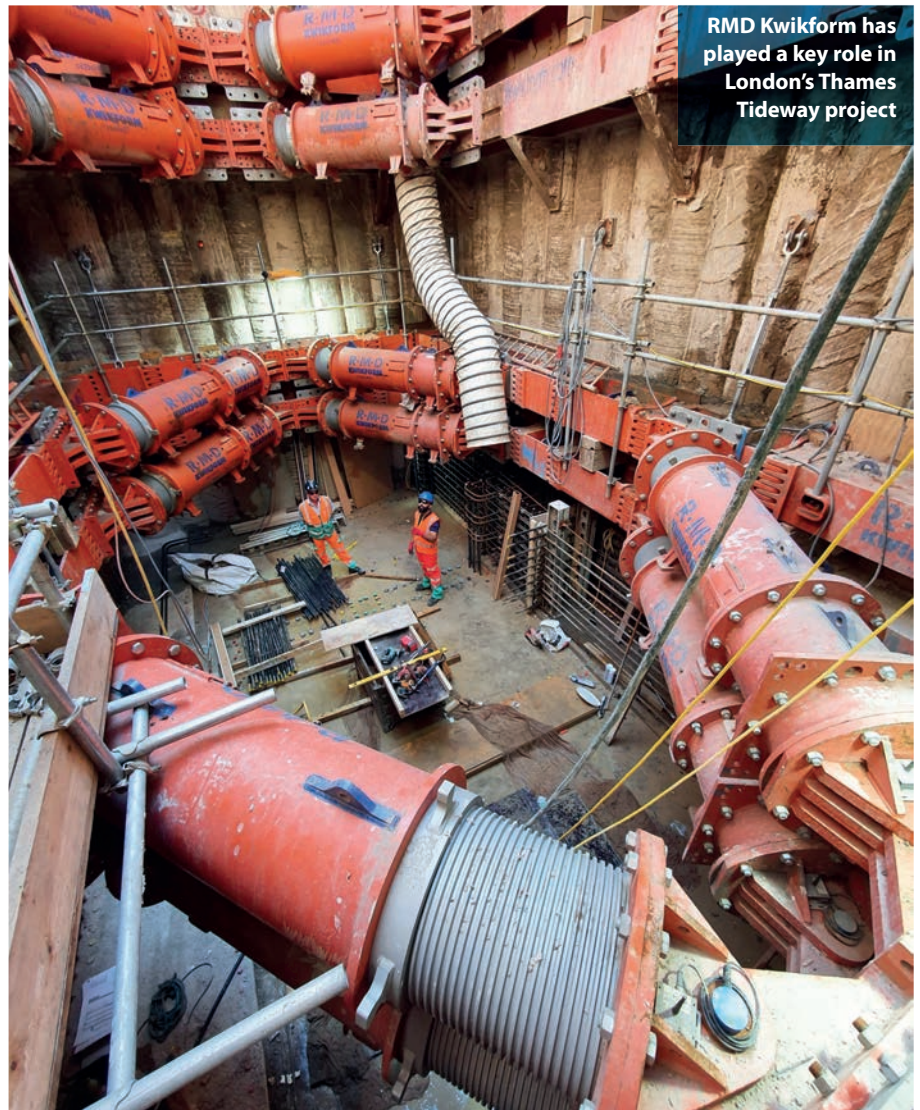
With the steel components involved being delivered pre-assembled from more than 500km away, it had to go just in time as well.

Klaus Mirna, who was Doka's site project manager, says: "The Swiss market is fiercely competitive; anybody who wants a piece of the action must be innovative."

Therefore, for Lochweidli, Doka designed a complete solution, which included a few dozen components which were specially developed for this tunnel.

The DokaMT system – the MT stands for Mining Tunnel – grows in accordance with the requirements of its users.

Doka said the job was wrapped up after nine months, the system with its accessories went back to the rental park, and contractor Strabag was pleased because the construction site was quickly cleared, and it had saved on an expensive equipment purchase.



RMD Kwikform has played a key role in London's Thames Tideway project



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THE SAFETY FACTOR

The RCS Max Rail Climbing System from Peri of Germany has been developed so that several platforms are able to climb a structure simultaneously and in fewer steps. The company says this improves productivity and safety on the construction site and speeds up the construction process significantly.

The second system enhancement, the RCS MAX Drive Rail with integrated cylinder and climbing device, is now available.

The new RCS system adds two further modules to the RCS system components: the RCS Max Hydraulic Unit and the RCS MAX Drive Rails. The drive rails are available in two lengths, depending on the project, and the modules are compatible with the ACS Self-Climbing System, offering the customer greater flexibility.

Because several platforms can climb a structure at the same time, Peri says that open building edges, tripping hazards and falling parts are now a thing of the past, which increases the level of safety on the construction site.

The two new RCS MAX C and CL Drive Rails allow platforms to be moved safely from one level up to the next position in 750 mm increments. This system offers time and safety advantages, as complicated conversions are no longer necessary.

One of the first projects was at London Dock in the UK, for Ground Construction.

"We used the PERI RCS MAX system for a fairly complicated core structure," said Bobby Edmunds, a Ground Construction foreman.

"The system was so easy to work with and gave us lots of confidence during the jump



The RCS MAX Hydraulic Unit allows several platforms to climb a structure simultaneously

sequences, it helped us to overcome the complexity of the core itself by having a trustworthy climbing system.

"With all the platforms climbing together, many of the safety concerns when jumping were removed making life much easier for the supervisors."

CAPITAL IDEAS

RMD Kwikform, a leading company in formwork, falsework and ground shoring, has played a major role in constructing the new Thames Tideway Tunnel in London, supplying its innovative ground shoring products to help support the excavation of a 16.5m deep interception chamber, positioned under the course of the River Thames.

The Tideway project, also known as the "super sewer", will prevent raw sewage from entering the Thames during heavy rainfall. The current sewerage system, much of which

dates from the 19th century, overflows into the river and struggles to accommodate London's burgeoning population. The 25km sewer tunnel will span from Acton in west London to Beckton in the east, capturing sewage overflows that would otherwise spill into the river.

One of the main challenges on this project was the confined shaft space, as well as the need for a robust solution to support the secant wall. Also, this section of the Thames is tidal, which can result in level changes of over seven metres – leading to cyclic loading at 12-hour intervals. RMD Kwikform's ground shoring equipment was chosen due to performance and sustainability factors.

Ajay Nagah, an engineering and major projects manager at RMD Kwikform, said, "We entered the frame relatively late in the design cycle where a traditional fixed structural steel solution had already been developed – which is usually the case with a job of this depth and duration.

"We therefore had to incorporate new features that would pose unique benefits to the site team. One such feature was the 'hybrid' hydraulic unit of the Tubeshor 610 props that telescopically extends to pre-load supporting members before being isolated mechanically.

"The hybrid ram ensures that all loads are transferred through the steel element of the prop only – providing high axial stiffness whilst mitigating the risk of hydraulic squash or failure whilst subject to high loads. All without the need for on-site welding." **ce**



Alsina continued with projects like this railway footbridge in Poland during Covid-19, and is now working on a major metro station project in Spain

Paschal looks to cover all angles

German company Paschal is expanding its product portfolio with four new accessories.

With its NeoR formwork system, it is offering a lightweight formwork said to combine the benefits of its Modular/GE universal formwork and the Logo.3 wall formwork system.

The new products comprise the NeoR transportation angle for 12 panels; N/R loading auxiliary; NeoR walling clamp 10 to 20 cm; and the 6 to 24 cm length L/N/A clamping support.

This means that between two and 12 NeoR panels, of 90 cm and 150 cm in height, can be transported with four transportation angles. The topmost and bottommost panels must have the same width, while further panel pairs can be stacked in between if the width of the extra panels fits within the width of the two base panels.

According to Paschal, the integrated bolts on the underside of the transportation angles make it easy to fasten them to the NeoR panels.

An additional advantage is said to be that the NeoR transportation angles can be stacked, so that two packs can be placed on top of each other.





Transport and Installation of sections (up to 12,000 ton) of the new 3.5 km long Storstrøm bridge in Denmark, by means of a tailor-made Fagioli catamaran

Transport, lifting and Installation of a 2,000 ton bridge in Italy by means of 500 ton jack-up system, strand jacks and SPMTs



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Supply in demand

Berco aims to reduce the time from material delivery to manufactured product from eight to two weeks

The industry offers its thoughts on the supply chain issues which are currently holding back construction's recovery in Europe.

Mike Hayes reports

Just a few months ago, construction professionals were breathing a sigh of relief, with the worst effects of Covid seemingly behind them.

The relief was short-lived. No sooner had the market started warming up, than supply chain issues appeared, threatening to put the brakes on the tentative recovery.

In fact, the European construction industry federation (FIEC) is in little doubt that the issue has the potential to derail the resurgent construction market. It says a combination of factors could come into play, including higher project costs, clients electing to postpone developments, and contractors withdrawing from projects, due to decreased or even negative profit margins.

clear is how long it will last.

Campogrande cites the sudden strong demand from recovering countries, but also highlights increasing demand for 'sustainable investments', such as energy efficiency in buildings.

"Finally," he says, "there are some big buyers – the US or China, for example – which are impacting the world market and some people are probably also speculating on this."

Certainly, the rise in global demand is making it increasingly difficult for construction equipment manufacturers to

source the components and raw materials they need.

Chris Sleight, managing director of equipment market analyst Off-Highway Research, says, "The global market for construction equipment is always around 1 million machines," says.

"If you find the market growing to more than that, then something gives and



RECOVERY ON HOLD?

FIEC director general, Domenico Campogrande, says the net effect of these scenarios could be "a significant delay in the implementation of the whole EU recovery plan".

The fact that a problem exists is not in question; what's less

FIEC director general, Domenico Campogrande



FIEC's snapshot of price increases in Europe

This list of price increases relating to the products and materials essential to the industry

derives from information gathered from members of the European construction industry federation.

It serves as a powerful insight into the

challenges currently being faced by both equipment manufacturers and contractors throughout Europe...

1 STEEL-BASED PRODUCTS (MAINLY REINFORCING BARS FOR REINFORCED CONCRETE)

- Year-on-year increase of up to 150%
- Increase of 15% to 40% since the beginning of 2021

2 WOOD-BASED PRODUCTS (eg timber frames)

- Year-on-year increase of up to 100%
- Increase of 10% to 50% since the beginning of 2021

3 PLASTIC PRODUCTS (EG INSULATION MATERIAL, PVC PIPES)

- In Lithuania, prices increased by 80% since November 2020

Vanguard's power boost

Briggs & Stratton has released a new 10kWh commercial lithium-ion battery pack.

The pack is now the largest in the company's range, promising up to 100kWh of energy, with 10 batteries connected in parallel.

Vanguard says in testing the pack has proven to withstand extreme temperatures, vibration, impact, moisture and dirt.

With two customisable CANbus networks can be integrated with legacy systems and a plug-in-ready sharing system can be mounted.

Paul Bramhall, Vanguard's director of marketing, EMEA, says, "The addition of this larger size battery pack expands our lineup to ensure that all power needs can be met.

"The 10kWh Commercial Lithium-Ion Battery Pack features all the same benefits as the other roll cage battery packs, just with greater power potential."



IMAGE © ADOBE STOCK



Social distancing is sure to slow production

stopping one of the most important freight routes in the world.

Shipping companies have been forced to close some lines and concentrate on the routes with the highest demand and margins. Some manufacturers report that the cost of hiring a shipping container has increased almost tenfold.

"We have been confronted with longer delivery times for machines and higher transport costs," says Jean Luc Trioulaire, director of customer operations at Haulotte. Since April, we have started to be impacted, mainly from China, with container availability times of several weeks.

SHORTENING THE SUPPLY CHAIN

In northern Italy, Berco specialises in the manufacture of undercarriage components for tracked equipment. The company's CEO, Piero Bruno, sees the current problem as universal, but one that can be overcome.

"Our goal, he says, "is to reduce the time from the material delivery on our premises to the manufactured product from eight to two weeks. We're aiming to achieve this with a comprehensive lean production scheme that we recently launched. Over the next few years, we will invest even more in the latest technology to reduce the lead time.

"Another pillar of our strategy is to move our suppliers closer to us in order to create a combined ecosystem together with our suppliers. Another element of our approach concerns analytical forecasting, using data from the past to determine our demands more precisely and ultimately, to keep up the pace at our production facilities.

"In today's setting, we must allow six to eight weeks for sea transports. Using our international sites, we can reduce this massively. So, the supply chain is an issue for us, but one that we are already addressing with different measures."

Austrian construction giant Strabag entered 2021 with caution, having already observed some problems with

Off-Highway Research's managing director, Chris Sleight

manufacturers can't meet demand. In previous peaks it has been hydraulics or tyres. This time around nothing specific is in short supply but everything is at its limit."

A PERFECT STORM

Similarly, when speaking to KHL a few weeks ago, Glen Hampson, construction division manager for equipment manufacturer Kubota UK, said, "The situation has created the perfect storm. There is not any one particular thing in short supply, it's everything."

Hampson said the situation is so challenging that, rather than the typical lead times of 3 to 4 months to deliver out of stock vehicles to customers, Kubota has said it could take around a year to deliver orders placed this summer.

He adds, "Our allocation this year is 6,400 units to supply our customers and dealers – that's an increase of around 1,000 from last year. But we've had dealers and customers trying to double and triple their orders this year."

A similar story came earlier in the year from Dutch compact equipment manufacturer



Tobroco-Giant.

Although Tobroco only sells through its dealer network, it too is feeling squeezed between a surge in demand from customers coupled with a shortage of raw materials and components.

RAW MATERIALS IN DEMAND

Plant manager Reiner Ubbink, said, "For this year, our best-selling products like the G2700 are sold out. We're now getting

into clearer forecasts for next year, but with a lack of raw materials capacity, orders made now through our brokers would probably only be delivered by Q1 or Q2."

At the start of 2020, Tobroco set production target of between 5,000 and 6,000 machines based on dealers' forecasts. However, the company says that it has seen additional demand of 20% with brokers asking for more than their forecast predictions.

"Last year we expected the lockdowns to impact our business but in fact, demand came back so strongly in the second half of the year that we sold around 3,600 machines which was more than we sold in 2019," Ubbink says. "This year we have already sold more machines than 2020 – and we are only half-way through the year."

Container shipping was also hit hard by the pandemic, with lockdowns cutting demand and disrupting the flow and availability of shipping containers.

Furthermore, in one disastrous week back in March, the 400m-long container ship Ever Given, fully loaded with 20,000 containers, became wedged across the Suez Canal, effectively

Berco CEO, Piero Bruno



- In Hungary, prices for thermal insulation materials increased by 55% since the end of 2020
- In Slovenia, prices for PVC pipes increased by 120% between May 2020 and May 2021
- 4 **BITUMEN (ASPHALT BINDER, ROOFING PRODUCTS)**
- Year-on-year increase of up to 85%
- Increase of up to 30% since the beginning of 2021

the delivery of construction materials.

"We expected only a slight increase in output for 2021," says the company's CEO Thomas Birtel. "After six months, we saw a new all-time high in our order backlog of more than €21 billion; therefore we are now confident that the 2021 output volume will be at the 2020 level.

"Like the rest of the industry, we experienced shortages in plastics, wood and structural steel. A main driver for this shortage was the stark increase of demand in the US and China, but also European markets are seeing strong growth due to public infrastructure programmes. While we never really experienced major disruptions of our construction sites, there will be effects on our profitability."

THE BOTTOM LINE

One contractor that sees a serious issue in the supply chain 'squeeze' is Metrostav, the largest construction firm in the Czech Republic.

The company's Vojtech Kostihá says that, given the combination of lengthening delivery times and rising prices for materials and components, "the

Vojtech Kostihá of Metrostav



construction company faces both penalties for not meeting the schedule and losses due to the inability to absorb input prices.

"The margins of large construction contractors in the Czech republic and Slovakia oscillate around 2.5% and when materials become more expensive by tens or hundreds of per cent, it must necessarily result in a loss.

"The construction contractors have no choice but to invoke contractual clauses, if they are lucky enough to have them, for unforeseen and uncontrollable changes in conditions and also claim agenda."

Kostihá says that, on top of issues with wood, steel and plastic products, the company is finding difficulty obtaining extruded and expanded polystyrene and other insulating materials.

The situation in the Czech Republic is exacerbated by high inflation rates and Kostihá believes materials prices could rise by another 5 to 10% before stabilising.

Tobroco-Giant's Reiner Ubbink admits that the situation is "very stressful". We are finding situations where our suppliers are only sending us 80% of orders we made a year ago," he adds. "Sometimes it is possible for us to find alternatives with

the same functionality. So someone who ordered one model might find that in fact it gets to them with a different steering pump or hydraulic cylinder.

"Some customers might find that they end up with a chair with electric heating and air suspension which we usually only use twice a year because we happened to have them in stock and it was the only way we could fulfil the order on time.

"At some point you have to say this is the end of flexibility and re-engineering. We have

been able to manage so far but we don't know how long this can continue."

Danfoss valve goes with the flow

Danfoss Power Solutions has launched the SLV20 valve, a compact, lightweight solution for low-flow applications that require load sensing and flow sharing.

Designed in sections to facilitate stacking of multiple functions, the SLV20 utilises the new ESV9 four-way three-position proportional solenoid cartridge valve in a hydraulic integrated circuit concept.

Developed with aluminium sections to cut overall weight, the valve can benefit fuel efficiency. Danfoss says its screw-in capability also delivers versatility, agility and serviceability for end users and maintenance technicians.

Being manufactured from aluminium drawn bar also makes it possible to produce small batches of individual sections with added functions, such as pilot-operated check valves or counterbalance valves, or other more customised requests.

Danfoss says the valves are suited for optimising performance in construction vehicles such as excavators, wheel loaders, skid steer loaders and trenchers, as well as tractors and various attachments.



Mecce Alte takes control

Independent alternator manufacturer Mecce Alte is set to globally distribute Sices control products and component packages.

Mario Carraro, director of Mecce Alte, said, "While culture, technology and design shifts and changes, one thing that remains constant is our commitment to our customers and the industry we serve. We are excited to announce that Mecce Alte and Sices Controller Division have joined forces to offer a complementary 'fit and sell' strategy through our respective networks."

The Sices range will include Gen-Set, Parallel and ATS products along with market leading Hybrid controllers.

Laura Curioni, CEO of Sices, said, "When an alternator is served to an OEM, it is common that a genset controller is required as well. We hope this will make it easier for customers to specify reliable control products that work in synergy with market leading alternator solutions. By working together our core aim is to offer greater value and build on our respective independent technological expertise."

The range will also be supported with spares and communication accessories, including those for 5G networks.

The Ever Given tanker in the Suez Canal

IMAGE © ADOBE STOCK



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High efficiency =

Historically, the need for a high level of efficiency on construction sites was primarily driven by the need to maintain profit margins.

Now however, the demand for greater efficiency is being equally driven by the need to reduce carbon emissions.

The events of the recent UN COP26 Climate Convention, which took place earlier this month in Glasgow, UK, with leaders from almost 200 countries in attendance, resulted in a raft of new government CO₂ commitments that will likely have a huge impact on the construction sector.

While these commitments will drive the future development of construction equipment and technology, manufacturers have been consciously striving to lower carbon emissions for some time through the development of telematics.

Now a vital construction industry tool, the latest telematics solutions being offered by manufacturers focus on help contractors to lower greenhouse gases both by increasing efficiency and by monitoring emissions output.

CARBON EMISSION MONITORING

Take Caterpillar for example, its Cat VisionLink telematics technology now enables contractors to track their equipment's CO₂ emissions.

By gathering machine, materials and personnel data, the web-based fleet management tool shows the carbon emissions produced by contractors' construction equipment, and enables them to view the data by asset, day and over a specific time period, at any time.

A subscription-based product, Cat LiveLink also offers users equipment location, health and productivity data – including utilisation and payload and volume information – which Cat says can help contractors “make more informed decisions” about their jobsites.

In addition to managing machine maintenance to reduce downtime, the ability to monitor and reduce idle time and fuel burn means contractors can also “eliminate assets

With new CO₂ commitments agreed at the COP26 climate convention this month, CE looks at how new telematics innovations can help lower carbon emissions

Volvo's Efficient Loud Out system comprises a downloadable app for truck and machine drivers and a live dashboard platform for office-based staff



that aren't earning their keep”.

This is particularly useful for those managing large equipment fleets, which can often be spread over multiple sites.

Of course, there are some projects that are so big they require a more bespoke approach to telematics.

LOWERING CO₂ ON INFRASTRUCTURE PROJECTS

A case in point is the High Speed 2 (HS2) railway in the UK. Construction technology company Trimble and field service management software specialist Totalmobile

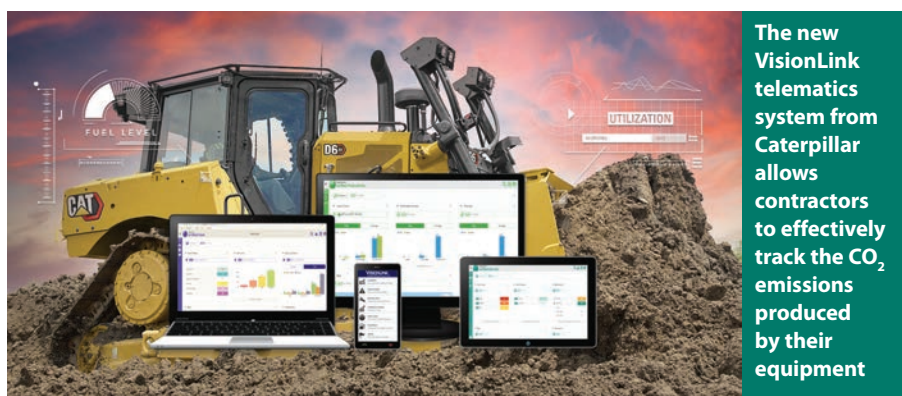
recently announced that they are to provide a new vehicle management and booking system for HS2.

The companies have been contracted by joint venture firm EKFB to develop a new cloud-based system to improve the logistics of EKFB's operations.

EKFB, which comprises the civil engineering and construction firms Eiffage, Kier, Ferrovial and BAM, is carrying out civil works to an 80km section of the HS2 rail link. The works include the provision of 15 viaducts, 6.9km of green tunnels, 22km of road diversions, 81 bridges and around 30 million cubic metres of excavation. Described as the “first of its kind”, Trimble and Totalmobile's new system will combine Totalmobile's Mobilise mobile workforce management application and Trimble's MAPS platform.

It will enable EKFB to monitor and track vehicles travelling to and from its HS2 construction sites in real-time. It will provide details on vehicle loads, collections and deliveries through a single dashboard.

Peter Bimson, the operations director at EKFB, says, “It will help overcome the significant complexity associated with maintaining oversight of the hundreds of thousands of journeys when working at scale



The new VisionLink telematics system from Caterpillar allows contractors to effectively track the CO₂ emissions produced by their equipment

low emissions



across such a large and diverse area.”

MAXIMISING EQUIPMENT LOADS

Similarly, Volvo Construction Equipment also offers a telematics product for projects that, like HS2, involve vast amounts of material being used and transported across various site locations.

According to Volvo, its cloud-based Efficient Load Out software connects machine operators, truck drivers and site managers in real time, allowing them to significantly reduce logistical delays, as well as maximising the load fill rate of equipment by up to 95% to 99% on each pass.

This means both underloading and overloading are reduced, optimizing the number of truck passes to help reduce carbon emissions.

Volvo says, “In mass excavation projects every load is vital and even the smallest

CASE STUDY Hitachi ConSite

UK recycling company Jack Moody (JM) Recycling is using Hitachi’s remote monitoring system to help improve the efficiency of its construction equipment fleet.

The company’s wheeled loader fleet, which comprises 11 different Hitachi models including the standard and high-lift ZW180-6 and ZW250-6 models, is deployed across four sites in the West Midlands and is monitored by Hitachi’s ConSite technology.

The automated system collects fuel efficiency, CO₂ emission and idling time data to produce a consolidated report on the machine’s performance.

The report is sent to fleet owners once a month and allows them to compare operational statistics, such as machine operating mode ratios, with those of previous months.

Robert Moody, JM Recycling’s managing director, says, “We’re in the fortunate position of having operators working at different sites, but doing similar operations with Hitachi machines. This has allowed us to analyse efficiency, usage and – ultimately – cost of production.

“ConSite gives us a tremendous amount of information and data to help make our business more efficient. To be able to see when a machine’s moving, how often it’s idle and how efficiently it’s working is so valuable when you’ve got multiple sites doing a similar process.”

According to Hitachi, ConSite provides users with access to a parts catalogue to help reduce the downtime associated with maintenance and repairs, and its ConSite Pocket app delivers real-time updates that alert users to any problems with the machines.

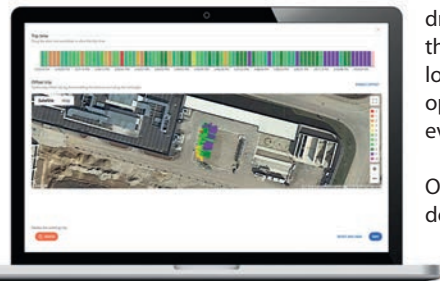
Moody adds, “I also use the ConSite Pocket app on my phone for receiving notifications or fault codes, while out in the yard doing everyday duties. In the unlikely event of a fault, being able to act quickly saves our company time and money.”



disruptions can add up to a big impact over time.

“Efficient Load Out has the potential to

EquipCare from Wacker Neuson provides real time fault detection



dramatically enhance the efficiency of the load out process and optimize payload on every cycle.”

Efficient Load Out comprises a downloadable app for truck and machine drivers and a live dashboard platform

for office-based staff.

After truck drivers have downloaded the app and registered their vehicle license plate number and maximum payload, construction machine operators can then log into the same system and “see the list of trucks waiting on site to be loaded”.

“The operator can ‘call’ for an available truck to be loaded at the press of a button, before

EKFB’s new system for HS2 will combine Totalmobile’s Mobilise mobile workforce management application and Trimble’s MAPS platform



TELEMATICS

filling the truck to its optimal payload, with the weight and type of material registered on the system," says Volvo.

Additionally, for office employees, the live dashboard means the administrative load out process can be carried out in a completely paperless way, with production information helping to support "better planning and more accurate decision making".

Volvo says, "With available information including weight and type of material moved, as well as loading and dumping location, the site office has total transparency on the performance of the operation.

"What's more, the information can be accessed by all stakeholders in the process, helping to strengthen collaboration and communication".

MINIMISING DOWNTIME

While Volvo has focused fleet management to improve efficiency and lower emissions, Wacker Neuson's EquipCare telematics system focuses on reducing machine downtime.

EquipCare uses a telematic module installed in the machine to monitor its status and location. If the module detects an error, the EquipCare system sends a report to the machine operator's smart device in real time.

According to Wacker Neuson, problems can be rectified more quickly as technicians can read the error codes online and contact equipment users "directly via chat".

The two parties can then arrange a service appointment and also exchange pictures of the machine to aid the diagnosis of the fault and resolve the problem.

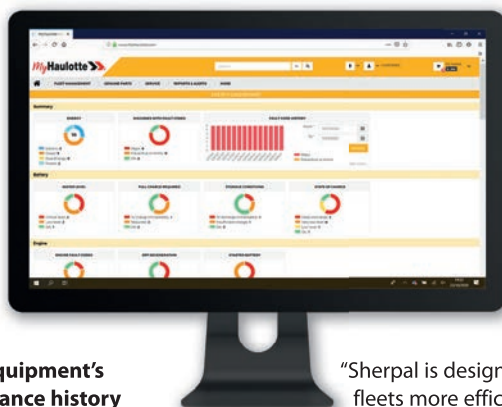
"Important occurrences in the life cycle of the machine are displayed online: a valuable source of information for the technician and detailed documentation about the machine," adds Wacker Neuson.

"With EquipCare, the technician knows the problem before he sets off and can bring the correct spare part or perhaps doesn't even have to drive to the construction site at all – this saves time, money, and unnecessary trips. The machine servicing is made more efficient and downtimes are kept to a minimum."

In addition to alerting users to malfunctions or unexpected use, the system also allows shows the equipment's maintenance requirements.

"Once logged in on their Smartphone or PC, they have access to an overview of all their machines, operating hours, and downtime as well as service intervals", says Alexander Greschner, Chief Sales Officer of the Wacker Neuson Group.

Haulotte's Sherpal system creates a permanent record that includes the equipment's usage and maintenance history



Wacker Neuson's EquipCare has also been combined with its Compacec compaction control technology to provide contractors with improved compaction control and quality monitoring

JCB upgrades LiveLink features

JCB has updated its LiveLink telematics portal with new features to help construction equipment users improve efficiency.

First launched in 2011, the JCB LiveLink telematics portal provides operators and fleet managers with access to equipment data through an online portal and mobile app.

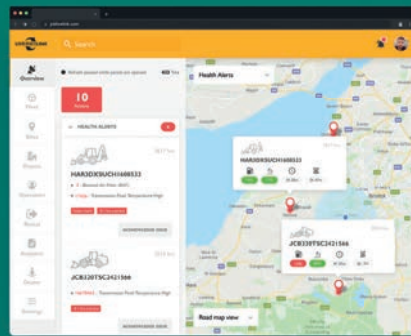
The new features aim to improve the efficient use of its equipment and increase machine uptime. LiveLink now offers document storage, an upgraded action-based dashboard and machine health alerts that notify users of potential problems before they suffer downtime.

In addition to the upgraded dashboard, which provides access to monitoring, usage and performance data, the LiveLink platform can also store important documentation such as compliance certificates and safety inspections.

JCB LiveLink is now also available with the optional 'Enterprise' feature. This enables information stored from users' existing rental or fleet management systems to be automatically added into LiveLink.

The "mixed fleet functionality allows the integration of other equipment brands' machines into JCB LiveLink - centralising the entire fleets' telematics data into one place".

JCB says, "This saves time and complication by eradicating the need for multiple systems. The machine sharing feature also allows the user to give visibility of equipment data to other users and organisations, which can be ideal for rental environments."



TELEMATICS FOR AP FLEETS

Similarly, French manufacturer Haulotte is also working to improve efficiency with the addition of its own telematics system for access platforms.

Launched in February of 2021, Haulotte's Sherpal telematics system is designed for aerial platform equipment fleets and provides users – such as rental companies, equipment owners and service managers alike – with remote access to machine data and an overview of the status of the entire aerial equipment fleet.

Christophe Lacaze, operational marketing manager at Haulotte, says, "Sherpal is designed to manage aerial fleets more efficiently. It delivers

focused and meaningful data to be more productive, secure the day-to-day operations and grow business."

The telematics device is equipped with a 4G antenna that regularly and securely transmits machine data.

Using an on-board GPS system, Sherpal can instantly locate machines in the field and provides customers with an interactive map so they can track a specific asset or get an overview of the entire fleet.

It also provides colour coded information on the real-time operational status of the machines, plus data for scheduling, maintenance deadlines and engine status.

Lacaze says that by connecting machines to Haulotte's telematics system, customers could increase the uptime and utilisation rates of their equipment, while reducing costs.

If Sherpal detects a problem with a piece of equipment, it sends the appropriate fault codes, root causes and instructions on how to fix the problem to the owner alerting them of the problem.



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Whether large or small, post-pandemic trade exhibitions at Messe Munchen will not be the same

Lucy Barnard finds out how the world's biggest construction trade show is evolving to survive in a post-pandemic world



The fast-changing face of Bauma

It may still be a year away, but already Messe München, the organisers of Bauma 2022, are busy reassuring exhibitors that they are taking every precaution necessary to keep them safe during the pandemic.

A promotional video on the Bauma website shows guests visiting the stands at the vast Munich exhibition hall conscientiously social distancing, applying generous dollops of hand sanitiser and wearing facemasks, all under the watchful eyes of women in white tabards who are there with the sole function of enforcing these measures.

BAUMA '22 TRADE EXHIBITION

It's a clear message from the world's largest trade show which in 2019 attracted more than 620,000 visitors with around 3,700 exhibitors from 63 countries.

But, with many companies around the world using the pandemic as a way to rethink the way they communicate with customers and colleagues, some have been taking a fresh look at how they participate in Bauma and other industry trade shows.

Bauma's organisers have been doing everything they can to ensure mass participation, especially for the international

customers. In April 2021, Messe München announced it was postponing the show which had been due to take place in April 2022, to October 24-30, in order to allow international visitors to attend.

"The show is fully booked, and the feedback is comparable to previous Baumas," says Collin Davis, executive director of capital goods shows at Messe München. "A few companies will pause in 2022 but overall, we expect around about the same number of exhibitors – national and international."

WHAT'S THE FUTURE FOR SHOWS?

Nonetheless, several big-name companies have announced that they are pulling out. These include Volvo Construction Equipment, aerial lift manufacturer JLG industries and mining services company Metso Outotec. Caterpillar announced it would exhibit at the show through its German dealer Zeppelin Baumaschinen rather than taking its own stand, and JCB said it was "unlikely" to be exhibiting.

Many, of course, remain firmly committed to Bauma, while others say they have yet to make a final decision about participation and are still weighing up the benefits of attending,

compared with the cost savings and environmental benefits of staying home and opportunities for new marketing approaches.

Cost is certainly an issue. Bauma, for example, costs around €300 (US\$346) per square metre to exhibit (for a minimum of 20 square metres), then you have to factor in temporary buildings, hotels, employees, and the transportation of machines and equipment. It can add up to millions of euros





for the biggest OEMs.

Those not attending next year point to the fact that sophisticated communication technology has made it possible to stage virtual events far more effectively than would previously have been possible.

“Covid-19 has accelerated new ways of working which has in turn changed customer behaviour,” says Paulina Ekestubbe, head of events and exhibitions in the EU and internationally, at Volvo CE. “Change was already happening but it has certainly prompted industries to adapt much faster.”

Instead, Volvo CE plans to launch what it calls “an all-channel marketing approach,” where everything from new product launches, to test drives to dealer conferences can be held both on-line and in person through smaller, more targeted local events.

REDUCING CARBON FOOTPRINT

“Our new approach reflects increasing demands being made to do business in a more sustainable manner and to reduce the company’s environmental footprint, which is just as much a factor,” says Ekestubbe. “We plan to have digital product launches to not only demonstrate a more sustainable approach but to also allow us to reach many more of our customers around the world.”

The company said it had not “officially”

calculated the amount of carbon it would be saving by not attending.

Ekestubbe says Volvo CE adopted its new marketing approach after completing an In-depth study on market trends, customer behaviours and an analysis of other industries and how they have evolved before and during the Covid-19 pandemic.

However, looking to the future, Volvo CE is quick to point out that it has not ruled out participation in Bauma or other trade shows beyond 2022.

Aerial lift equipment manufacturer JLG adds that its decision to step away from Bauma next year has been the result of employees around the world adopting more flexible working patterns. With fewer and fewer staff working regular office hours, the number of people able to commit to a week-long stay out of town are also declining.

“Customer interaction has certainly changed in the wake of Covid-19, driving companies to think differently about marketing opportunities – both in the short- and long-term,” says Jennifer Stiansen, director of marketing at JLG. “This challenge has led JLG to explore new options outside of its traditional channels and marketing activities.”

“Even before the Covid-19 pandemic, we began looking for ways to build more customised marketing experiences for our customers,” she adds. “One of the things we have discovered is that there was an appetite in the industry for on-demand, immersive online experiences that would continue to have value well beyond the pandemic.”

FLEXIBLE WORKING

“As nine-to-five workdays have become a thing of the past, flexible working is increasingly common, so we also have wanted to develop experiences that allowed users, regardless of time zone, the ability to experience JLG where and when they want, giving them the control to explore what was of greatest interest and of greatest benefit to their business on demand,” she says.

To meet this need, JLG has created its own ‘Access Your World’ platform, a sort of video game-like website where customers can walk around virtual job sites, inspecting pieces of equipment and seeing how it works.

Stiansen also agrees that virtual experiences will not completely replace face-to-face events such as trade shows. However, she adds that the company believes “smaller, more personalised, regional events will gain in popularity.”

Stefanie Wieland, director for corporate marketing at construction equipment manufacturer Wacker Neuson Group, says, “Bauma still plays a major role for our customers to meet, exchange and get information about latest product developments,” she says. “Especially after a long period of little personal contact, our customers are more than open to visit Bauma.”

However, Wieland says that although Wacker Neuson’s customers are keen to return to exhibition halls, both the numbers of people



The München Exhibition Centre in Munich
PHOTO COURTESY OF MÜNCHEN COMPANY



TRADE SHOWS

Melker Jernberg unveiling electric equipment at Bauma Munich in 2019

attending, and the overall budget is being reduced.

"We talked to many of our customers including people from different industries and countries to get a broad picture. Additionally, we asked our own salesmen as well as our dealer partners. The result is a general "yes" to shows and events, but in a smaller scale than before the pandemic," she says.

As such, although shows and events in 2022 represent a larger proportion of Wacker Neuson's marketing budget compared with 2019, the overall amount is smaller, she says.

Certainly in the past, Bauma budgets have been a significant cost for companies. As well as the cost of renting exhibition space, firms must spend thousands of Euros on other associated costs. Build costs alone for a 60 square metre two-storey stand come out at around €45,000, while staff accommodation for a team of around 50 people costs another €65,000.

Although Liebherr says it is "too diverse and complex" to make any general statements concerning its overall marketing strategy, the German-Swiss equipment manufacturer attended Minexpo and is also firmly



JLG announced this year it would not attend Bauma but would be creating more digital events to market its products

committed to attending Bauma next year.

"In 2022, Liebherr will be again among the largest exhibitors at the Bauma, with seven out of 13 product segments participating," a company spokesman says. "The pandemic has revealed

a lot of potential for alternative forms of communication and cooperation, but at the same time, it has also confirmed the enormous importance of personal encounters and face-to-face dialogue with customers, partners and business associates.

"In our opinion, trade fairs and similar events will remain important occasions to get in touch with and to personally exchange information with our international community, eg customers, partners and fans that we have all over the world," she adds.

French aerial work platform manufacturer Haulotte says it is still debating whether to attend Bauma. In what it calls a "global" strategy, the company has, for many years,

Face masks are becoming the norm for trade show visitors



PHOTO COURTESY OF NIMA



toned down its marketing activity around shows and exhibitions in order to focus on its own dedicated events. It is then up to each of the company's 21 sales subsidiaries to decide whether and how to take part in local shows.

"At this stage everything is open," says Caroline Prost, Haulotte's marketing manager. "Nothing has been cancelled. Our events and marketing strategy is flexible and allows us to react quickly when necessary."

"Digital events have to be carefully considered, because they do not allow the face-to-face discussion," Prost says. "We believe in 'phygital' but only for dedicated subjects, or for the key moment of the Group communication."

To that end, most show organisers have used the pandemic to accelerate plans to increase their digital offering.

VIRTUAL TRADE SHOWS

Bauma says that for the first time, the 2022 show will include a "digital addition or extension," which it hopes will appeal to those firms which would like to have a presence at the show without actually attending. The company says it is currently testing several models, such as the one being used at Expo Real, and plans to start marketing digital advertising opportunities at the start of 2022.

"The past months have pushed digitisation in general in an extraordinary manner," says Messe München's Davis. "As an organiser of trade shows worldwide we were practically forced to adapt really quickly to the new situation and find other and new ways to offer platforms for the industry. By doing this we learned which digital concepts are suitable for the market. So, by now we have some easy-to-use platforms which can be a helpful addition, or 'extension,' to a show on site.

"I'm convinced that shows, where you meet face-to-face, are still the best networking platforms when it comes to business," he adds. "However, I also think that nowadays, digital extensions really offer an additional value for exhibitors and visitors alike."

At the end of the day, Davis says, visitors will only return to trade shows like Bauma if they can see value in doing so. "Even though we all learned to meet via digital channels, present products online or even have parties in chat rooms, a face-to-face meeting...is the best possible way of meeting and establishing business contacts."

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As the construction industry struggles to recover from Covid, supply chain issues and emissions, Europe's rental market is booming, as Belinda Smart reports



Marin Seban, IHS Market, speaking at the 2021 ERA Convention

PHOTO: MAURICE VINKEN



Rental returns

Bearing in mind that construction was seen to be at the top of a cycle just before Covid struck, with a downturn of some degree anticipated, the rental market in Europe has coped surprisingly well.

The European Rental Association (ERA) recently produced an update of its market forecasts for this year, which shows recovery happening faster than previously predicted.

Martin Seban of economic analyst IHS Markit said the scale of the rebound had come as a "real surprise".

DIVERSE FORECASTS

The situation led the ERA to forecast rental market growth in the UK (up 8.5% compared with the previous forecast of 5.5%), France (up 11.5% rather than 9.5%) and Italy (8.0% against 6.5%).

Rental growth estimates for 2022 are now standing at 6.0% for the UK, 5.2% for France and 7.5% for Italy.

In Germany, by contrast, ERA forecasts that growth this year will be 3.8% rather than the 4.0% published in June, with growth shifted to 2022, when the market is expected to expand by 7.0%. This is because of the time required to start infrastructure projects.

Growth in Spain has also been shifted to 2022, with this year's growth expected to be

5.0% - down from the previous estimate of 5.5% - but strengthening to 7.2% in 2022.

Rental growth in the Nordic region this year is expected to be around 2.7%, with the highest growth in Denmark at 4.2%. In 2022, the market will strengthen to 3.9% growth, with Norway, Finland and Denmark all forecast to see +4% growth, with Sweden forecast to increase by 2.9%.

Overall, Central Europe - including Germany, the Netherlands, Poland and Austria - is expected to grow by 4.0% this year and by 4.7% in 2022.

Taken together, Southern Europe - France, Spain and Italy - are expected to grow by 8.1% this year and by 6.6% in 2022.

Seban said Southern Europe and the UK - among the worst impacted by the pandemic - will have to wait another year before their rental markets reach 2019 levels.

Against this backdrop of relatively good news for the rental market in Europe, rental companies are adapting to a post-Covid world that demands reduced emissions and greater productivity within the construction industry.

Sustainability manager Petra Lampa says the alternative fuel, HVO100, comprises 80% of the fuel used to power Kranpunkten machines

A SUSTAINABLE OPTION

In Sweden, Kranpunkten, a specialist in aerial platforms, telehandlers and other lifting equipment, is adopting ambitious new measures to achieve its aim of becoming 100% climate neutral.

The company's sustainability manager Petra Lampa, says, "Our view is that sustainable value creation is a business prerequisite."

Underscoring this ethos is a culture of continuous improvement, including measures to reduce emissions from machinery, vehicles





“ Rental companies are now having to adapt to a post-Covid world that demands reduced emissions and greater productivity within the construction industry.”

During 2020 Mollo Noleggio completed 53,000 rental contracts for 61,000 equipment items across Italy and Europe

when we were able to provide customers with the machines or services they needed at very short notice.”

TURNING TO TECH

Rental companies operating in mature markets know all too well that service and efficiencies are as key to success as the equipment on offer, and Italian company Mollo Noleggio is no exception.

A strong focus on both may explain the company's solid performance in spite of the outbreak of Covid-19 18 months ago; in March, Mollo Noleggio reported a total turnover of €80 million for 2020, a 10.7% rise on the previous year.

One clear opportunity currently being adopted by rental companies is digitalisation to enhance efficiencies, speed up operations, cut costs, and pass financial and man-hour savings on to customers in the form of enhanced service.

Mollo Noleggio has embraced the new trend in recent years, with a widespread digitalisation project.

This includes the development of supporting vertical software for enterprise resource planning (ERP), and a web portal to implement customer service, sharing real-time information through a satellite system for the location of fleet, the detection of basic information on machine operation, and maintenance planning.

The company has also created web apps able to integrate and track the rental chain, from customer requests to rental management, deliveries and service feedback.

Mollo Noleggio's CEO, Mauro Mollo, says the new platform has helped efficiently manage work activities and workflows, simplified employees' processes and given greater transparency to customers.

A further set of apps has digitalised training courses on licences and certifications required by customers.

Meanwhile the

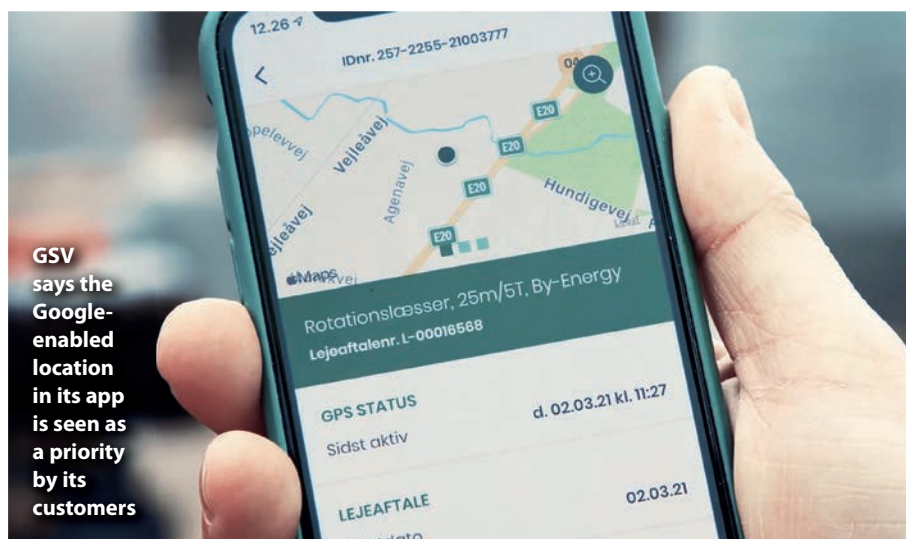
implementation of an intranet that collates all apps relevant to rental management, has sped up the flow of information inside and outside the company.

“Today we have digitised 90% of our business processes, starting from the detection of damage caused on vehicles, the management of activities related to the workshop, the signing of rental contracts and the management of commercial

agents' activities,” says Mollo.

In fact, Mollo Noleggio describes itself as the first rental company in Italy to have implemented digital signatures.

The project, implemented by its internal IT team, has eliminated paper, automated key processes and enabled the automated sending of rental contracts and documentation to customers, who can sign documents, remotely if necessary, via PC, table or smartphone.



GSV says the Google-enabled location in its app is seen as a priority by its customers

and transport, phasing out of hazardous substances and reducing energy consumption and waste.

Alternative fuel sources have long been a focus for the Kranpunkten fleet; of the company's 2020 machine investments, 84% were pure electric machines or hybrids. And since the beginning of 2021, Kranpunkten has been using the alternative fuel HVO100 for its machines where possible, a move it says reduces carbon dioxide emissions from relevant machines by up to 90%.

The company now uses HVO100 extensively, saying it comprises around 80% of the fuel used to power its machines.

Lampa says the goal by the end of 2021 is to ensure that 80% of all transports that take place with the help of logistics partners should be carried out with alternative fuels in the tank.

“With new truck-mounted platform lifts, we're increasing the proportion of vehicles with emission class Euro 6 and receive the latest technology in internal combustion engines,” says Lampa. Waste reduction is another focus.

Mauro Mollo, CEO, Mollo Noleggio

“With the long-term strategy and short-term operational plans, the aim is now for the business to become completely climate neutral.”

Underpinning Kranpunkten's sustainability initiatives and operations is the Function Pool, an organisational system developed by the company in 2006, and a protected trademark since 2008.

The system works through the establishment of smaller depots with machines on large sites, which enables rentals and machine servicing on site.

The development of Function Pool was prompted when the company identified a need for coordination of machine resources on larger projects.

Lampa says, “We also saw the environmental benefits that, for example, fewer transports entail, as well as the increased level of service



"In 2020, our customers digitally signed 36,000 rental contracts which is 68% of the total contracts.

"This is an important achievement, along with the simplification of processes and more efficiency of business procedures. As well as the safer option of remote signatures during the Covid-19 pandemic, Mollo says the system has clear commercial benefits.

"With the average time taken to manage a traditional paper contract, from printing to storage, totalling five minutes, those 36,000 digitally signed contracts in 2020 gave Mollo Noleggio a total saving of 3,000 hours of work, time recovered and used for commercial activities."

'DIGITAL OVERHAUL'

Just prior to the outbreak of Covid, Denmark's largest generalist rental company, GSV, developed its own customer app. The fruit of a wider digital overhaul which began two years ago, it clearly helped the company as it negotiated the pandemic last year.

"Customers found it very useful not to have paperwork physically changing hands", says GSV digital director Peter Fritzboeger. "We also saw a 10% reduction in calls, which translates to a similar increase in digital traffic."

The company now has 3,000 customers signed up for the app and 10% of orders last year were made online, with plans for that to grow to 25% this year and by as much as 65% by 2022 and 2023.

The wider project – "a 360-degree digital overhaul" – is transforming the way the company does business and, appropriately perhaps, the impetus came initially from its customers. In fact, customers' involvement remained key throughout the project, says Fritzboeger.

"The initial impetus was demand for a quick and easy overview of what customers had rented. We developed an app first because we knew that all our customers have a smartphone. It was later that we added the same functionality to our website.

"The idea behind the app was to give our customers an overview of what they'd rented with us via a digital sales channel, enabling the ability to order new items and to cancel items they didn't need anymore, with the aim of optimising their rental activities with us."

Following the launch of the app, GSV turned its attention to the internal processes to support it.

In 2020, the company – which carries a wide range of equipment from handheld tools for minor construction jobs to machines for major infrastructure projects – expanded its digital infrastructure by tagging 20,000 items with near field communication (NFC) chips.

Fritzboeger says, "We ensured all our staff had the app and that they were using it to track each item through the whole rental process. So, every time a piece went from one process to another, it was tagged and timestamped. As a result, we now had a full overview of each item."

This part of the project also required building service workflows to support

Rental companies like Sunbelt Rentals are investing in cleaner, low emission equipment



operational processes, from instant calculation of transportation costs and logistics to registration of delivery and return pick-up, including photo documentation, Google-enabled pinpointing of geographic position, transportation time and even the impact of CO₂.

GSV appointed the digital agency Adapt to help build the app and online platforms and Relate IT to build the ERP platform.

Fritzboeger says Adapt brought valuable experience in "bringing the customer into the conversation and understanding how they would use it every day, on the construction site. At every step in the process, we had customers testing the functionality.

"If you have a huge construction site, you have hundreds of bits of machinery, so you need to know where each item is; you need to know what you have and what has been standing still for some days, for example. But it was also very important that this was easy

to use. You don't want a lot of buttons; just a quick, easy overview."

RENTAL'S BIGGER PICTURE

Looking at the current situation, with Europe's construction market growing rapidly and generally anticipating a return to pre-Covid levels next year, many observers believe the challenges of Covid, supply chain shortages, material price rises and sustainable operation have actually served to accentuate rental's role at the heart of the post-Covid construction industry.

In many ways, the pandemic has given rental companies the confidence to go to contractor customers with a wider project management role in mind.

Sunbelt Rentals UK – the UK business of rental giant Ashtead Group, managed to win as much as 80% of health department contracts to create 500 Covid-19 testing centres around the UK.

Andy Wright, CEO of the UK business, says, "The concept of mobilising a temporary infrastructure to help our customers to deliver their project applies to a lot of different sectors.

"Ultimately the client's core business is to build something or provide an event or whatever. The kind of things that they use to do that is a necessary evil... So I think there's an opportunity to provide a holistic service, encompasses all those different products and services that allows our customer to focus on [their core business]."

Similarly, in Germany, Zeppelin Rental is investing in services – such as traffic management – that allow it to contribute to a project from start to finish, while in Scotland, power rental giant Aggreko is investing heavily in battery, solar, gas and bio-fuel technologies that will help its clients reduce CO₂ emissions.

ce



Peter Fritzboeger, digital director with GSV



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Growth through challenging circumstances

When a man as experienced as Scott Park, President and CEO of Doosan Bobcat, who has been in the construction industry for decades, says that he has never experienced a set of circumstances close to what we have now, it confirms that we really are in uncharted waters.

The Covid-19 pandemic has been accompanied by a global materials shortage, supply chain issues, a lack of skilled labour and, let's not forget, one of the strongest years for equipment sales that the construction industry has ever seen.

"I'm more than 30 years into my career and I've never seen a year like this before. We have a lot of people that are working extremely hard to make sure that we have manufacturing taking place," says Park. The President and CEO was speaking to me via a video call from the Czech Republic where he was taking a look at one of the company's factories.

Park says that just meeting the normal production schedule takes lots of teamwork and flexibility. "There's a lot of very tired people in the organisation, but I always tell them, 'look at the bright side: would you rather have the other situation where we're trying to figure out where we're going to get the next order?'"

It is certainly true that there is no shortage of orders coming in. Park says that, for the last few years, sales have been a touch under

Despite the pandemic, supply chain issues, and other challenges, construction equipment sales are booming. Doosan Bobcat has performed strongly and has ambitious plans for the future, as Scott Park, President and CEO, tells Andy Brown

US\$4 billion – this year they are projecting US\$4.5 billion. While this is strong growth, Park characterises it as a "good news and bad news story." He comments that, "The good news is that we're selling more product than we've ever sold before. The bad news is that if we could make more product, we would sell even more.

"That's coming from the disturbances in the supply chain. We're up somewhere in the neighbourhood of 20 to 30% year on year so far. It's been an extremely strong year. Our top line projection for this year is going to be significantly higher than the highest year we've ever had in history."

During our conversation Park comes across as engaging, open, and thoughtful, providing genuine answers to questions. He gives another nuanced take on the problems that the issues in the supply chain bring to all global companies, even joking that if we were to really get into the finer details then we'd be talking for hours.

He says that the worldwide computer chip shortage has impacted Doosan Bobcat – while they have fewer in their equipment than, say, the automotive industry, there are still around 140 chips per machine. This has led to issues, but one of the big problems is when they don't know what components will be missing.

"Really, the key point is that we really don't know where the product or component shortage is going to come from. One day it might be an engine. Next day it might be rubber tubing. The day after it might be a display or some telematics device. It's really all

Scott Park, President and CEO of Doosan Bobcat



The company is one of the leading players in the compact equipment market



the way across the board and it's for different varying reasons."

Even when factories have the raw materials available, they sometimes can't produce what is needed due to a shortage of skilled labour. And, speaking about raw materials, the costs of some of these have been skyrocketing.

"We track quite a few commodities, but the one that's most closely related to our product is steel, and prices have gone up multiple times, around three or four times in a given year. That's been quite a challenge."

EXPANDED PRODUCT RANGE

There's no doubt that the last year – well, the last 18 months, really – has been, and continues to be, difficult for all types of businesses. While the circumstances were very different, Park is no stranger to having a lot of balls in the air, so to speak; several years ago he formulated a strategy that saw Doosan Bobcat launch more product categories in a few years than the company had in its history.

"In 2018 through 2020, we really accelerated the strategy around playing a bit more offence than defence. Through that three-year period we introduced more products, product categories and product concepts than we did in the whole 60 year existence of the company, if you can imagine that," comments Park.

"It blows people's minds considering how long Bobcat has been around and how many products that it has. But, if you look at our portfolio today, it's not double, it's not triple, it's even more than that. We were focused on mini excavators, compact track loaders and skid steer loaders, those three main categories. Now we've got more than ten. It's a huge introduction of new products while at the same time upgrading and updating our current equipment."

As well as this bold change in the company's approach to its product line-



The company's E10e electric excavator – Park says that the higher cost of electric remains a barrier to wider adoption

up a new strategy regarding construction technology was also unveiled. Park says, "The construction equipment business, especially the compact construction equipment business, has been quite slow in innovation and technology. In smaller, less costly products you often don't see as much innovation because of the proportion of the cost to the product."

Seeking to help address this the company launched their new strategy, FACE, which stands for: Future, Automation, Connectivity and Electric. Future is a focus on how retail will change and evolve, such as increased digital offerings. Automation needs no explanation; it is a rapidly expanding area.

"Obviously, because of the fact that our products have so many different attachments in applications that we use them in, you're not going to see, in the near future, a fully automated loader, right? I mean, it's very difficult to have 400 attachments and have it all automated," says Park.

"However, you will see semi-autonomous or even specific function capable autonomous features coming onto our products quite soon. We already have prototypes on different kinds of functions and capabilities, which now a user can use within the product itself."

The E stands for electric, or more accurately, electric and alternative power, now that hydrogen seems to be emerging as a genuine option for the industry. Electric is the main focus, though, and the company will be showing an electric compact track loader at the CES show in Las Vegas, US.

Park says that, regarding electric power, "The technology is here. The capabilities are here and we continue to expand our portfolio." When asked what the biggest barrier to the more widespread adoption of electric equipment from its current (relatively) low level is, he has a succinct answer: cost.

"Clearly, we do see customers that are requesting it, but there is a price differential that you need to pay... so it is really about when can that price level be at the same level as the internal combustion products.

"If you look at the automotive industry, or at some other industries, true acceleration comes from regulation, whether it's



Doosan Bobcat recently expanded its product range from three main products to over ten

regulation on the requirement for non-emissions engines or a regulation which means a subsidy into that product category that brings that picture together."

FUTURE TARGETS

With original equipment manufacturers reporting that their order books are already filling up fast for next year, it looks like the major headache for the OEMs will be finding the parts and labour to fulfil the orders, rather than chasing sales. Park certainly sounds bullish about the future, saying, "This is just the beginning. You're going to see continued growth in this organisation; this year is going to be the biggest year ever when it comes to product sales.

"If you look at our history we have really stayed within that US\$2 to US\$3 billion range. But this year we will be in the mid fours and next year, with the inclusion of the forklift company that we purchased, we will actually be in excess of US\$6 billion."

This strong demand for sales is occurring at the same time that the industry is experiencing more change than it has in a long time: new technology such as automation and remote control, new power options like electric and hydrogen and increasing pressure to reduce carbon emissions and become more sustainable are all pressure points.

"It's a very exciting time," Park agrees. "At the same time, it's a very scary time. We are transforming and my objective is that we want to be ahead. I want Bobcat to be the company that will sell its technology to its competitors. The objective I've given to the innovation and R&D teams is that we want to be ahead of the game, and we want to move the market in in a certain direction.

"We invented the skid steer loader way back when; we invented this category. Why can't we reinvent the compact construction equipment market yet again and be the leader in it moving forward? I think there's a tremendous amount of excitement and a tremendous amount of change, which means a tremendous amount of challenge ahead. But it's something that I feel we're well equipped to attack."



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CRUSHING & SCREENING

The Lokotrack
LT200HPX crusher

Metso launches two Lokotrack crushers

Metso Outotec has expanded its Lokotrack crushing and screening equipment range, adding two new mobile cone crushers to the lineup.

The Lokotrack LT200HPX and Lokotrack LT220GP were launched via a live event that was streamed online this morning (27 October, 2021).

Described as “compact but efficient”, the new machines are designed to work with construction aggregates and provide 30% more capacity than previous comparable models.

Both the LT200HPX and LT220GP are powered by a Cat C9.3B power transmission and are built a new chassis that enables customers to choose between two high capacity cone crusher options; the Nordberg HP200 or the GP220 cone crusher – which are both suitable for hard

rock crushing.

Kimmo Anttila, VP for Lokotrack Solutions at Metso, said, “With these new models of 300t/hr capacity and 40t transport weight, customers have more choice and flexibility to select from our cone crusher range.

“Lokotrack is a sustainable and future-proof choice for any type of aggregate production.”

While the LT200HPX has an operating weight of 42 t and the LT220GP weighs 38.5 t, both have transport dimensions of 19 m (62 ft) in length, 3 m (10 ft) wide and 3.5 m (11 ft 6 in) high. According to Metso, the compact size of crushers enables contractors to move the units between sites on trailers.

Additionally, both models feature a two-deck pre-screen with a fine material bypass that allows them to process more

material.

The crushers are available with either H12-10 or H12-12 main conveyors that, in addition to a high throughput, offer an adjustable discharge height that allows them to be combined other machines.

While the Lokotrack LT200HPX mobile cone crusher can be used with Metso’s Lokotrack LT106 and LT116 jaw crushers – as well as the Lokotrack ST3.8 and ST4.8 mobile screens – the LT220GP is said to “fit well” with the “Lokotrack LT120/LT120E mobile jaw crushers and ST4.10 mobile screen for high-capacity aggregate production”.

Optional extras for the Lokotrack crushers include a high-pressure water spraying system, dust encapsulation for conveyors and a fuel pump with truck connection. **ce**

EARTHMOVING

Bobcat's new R2-Series mini excavators

Bobcat has launched its new R2-Series of mini excavators, adding two new mini excavators

models in the 5 to 6 t class range.

The new E50z and E55z mini excavators weigh 4.8 and 5.2 t

Bobcat's E55Z mini
excavator



respectively and are both powered by a Kubota V2403 four-cylinder engine, which provides 36.5 kW of power at 2200 RPM.

Designed to be both robust and “easy-to-use”, which will appeal to the construction equipment rental sector, the mini excavators offer operators a cab with more headspace, legroom and storage.

Building on the company’s R-Series range of machines in the 2 to 4 t class range, the larger R2-Series models are the first of next generation machines to include the Bobcat Zero House

COMPACTION

Compact vibratory plate from Bomag

Bomag has extended its light equipment range with the launch of the BR 95, a single direction vibratory plate for use on gravel, sand and mixed soils.

The square base plate with rounded corners (450 mm) makes the plate suitable in particular for repair and improvement work in earthworks and paving, said the manufacturer.

The machine is designed for working in confined spaces and it is able to compact right up to the edges. It has a working speed of 30 m/min, designed to maximise efficiency.

Depending on the material, the fill height in one pass is 25 cm. It comes with a lower amplitude than a tamper and a weight of 92 kg.

Mechanical vibrations have been minimised: in terms of hand-arm vibrations, the machine produces values of less than 2.5 m/s².

This potentially allows operators to work with the Bomag BR 95 for up to eight hours, which also simplifies documentation requirements.

Bomag's
Br 95



Swing (ZHS) feature.

ZHS ensures that the upper structure of the machines – including the boom swing offset cycling, front corners, handles, lights and the door – “remains fully within the footprint of the tracks” when rotating. **ce**

An examination of the Brexit effect

CECE on the ramifications of the revised European machinery legislation on UK-EU relations

Revised or new legislation such as the new Machinery Products Regulation, the revision of the Outdoor Noise Directive and the new regulation harmonising road circulation requirements will enter into force in the European market. How the UK will adopt these new developments is an open question. Different scenarios are possible.

With the Trade and Cooperation Agreement (TCA) between the EU and the UK coming into force on 1 January 2021, it is important to analyse the evolving framework for cross-Channel trade in construction equipment. The TCA, together with the Northern Ireland Protocol, governs the EU-UK economic and trade relationship. Compared to other free trade agreements in place, the TCA is unprecedented in its scope and ambition.

Relevant scopes for the construction equipment community are the chapter on trade in goods, with the significant provision of zero tariffs and zero quotas on all goods complying with rules of origin requirements; a chapter on customs and regulatory cooperation, with

the simplification of customs procedures; the facilitation of short-term business trips and temporary movement of natural persons for business purposes; and the provisions on public procurement granting EU and UK companies the right to participate on equal footing in bids.

Moving to the ambition, the TCA established a governance framework, at the top of which there is a high-level Partnership Council assisted by specialised committees, including a committee on technical barriers to trade. In case of significant divergences between the EU and the UK in the legislation on labour, environmental and climate protection or on subsidy control, the TCA includes the possibility of applying "rebalancing measures", provided that these divergences cause material impact on trade or investment. Finally, there is a mechanism to review the agreement, which can be requested in certain circumstances by either party.

REGULATORY ALIGNMENT... WITH DIVERGENCES

Although the TCA contains the relevant provisions of zero tariffs and zero quotas on goods moving across the channel, it must be noted that the TCA contains very few provisions on technical barriers to trade (TBTs). Specifically, there are no provisions on conformity assessment procedures, apart from the possibility to keep allowing the use of the Self Declaration of Conformity

(SDOC) in those areas where it is currently allowed. Considering this, provisions on TBTs, including the rules for conformity assessment procedures, will continue being in the remit of the public authorities of the European and British markets.

Starting with the health and safety requirements and standards for demonstrating product conformity, it can be stated that the technical requirements for construction machinery in the EU and the UK are now almost completely aligned. At the end of the Brexit transition period the UK carried over and applied any EU-derived law that had already been applied before 31 December 2020, including the health and safety requirements of the Machinery Directive. The UK law differs in certain areas, some of which related to the implementation of the new regulatory situation after Brexit. This particularly applies to labelling requirements and the recognition of EU type approvals in the UK. On this point, the British authorities recently announced important updates consisting of the extension of three deadlines:

- 1 The UK will continue to accept CE marked machines to be placed on the British market through until 31 December 2022. However, the authorities

encourage to use UKCA marking as soon as possible, in

CECE
secretary-general,
Riccardo
Viaggi



“ an area of divergence between EU & UK is Stage V transition engines deadlines.”

particular in case of third-party conformity assessment, as this takes more time than in case of self-declaration.

- 2 The UK will continue to accept that the UKCA mark is placed on an accompanying document, rather than on the product itself, through until 31 December 2023.
- 3 The UK will continue to accept EU type approvals covering non road mobile machinery engines but also to category O trailers and certain safety components through until 31 December 2022.

However, another area of regulatory divergence between the EU and the UK is the Stage V transition engines deadlines. The six to nine month extended deadline in the power category between 56 kW and 130 kW was not applied in the UK as the EU approved them after 31 December 2020. As such they are applicable in the EU but not in the UK. Whereas the 12 month extended Stage V transition engine deadline for power categories lower than 56 kW and greater than 130 kW were automatically applied in the UK.

OUTLOOK FOR THE FUTURE

As the reaction of the British authorities are quite uncertain, CECE will closely monitor the situation and engage with the responsible parties to ensure that the interests of the European construction equipment sector are considered in a proper and fair manner across the channel.



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FIEC voices its support for legislation to ensure safety for construction equipment operators

The Machinery Directive concerns machinery and certain parts of machinery. Its main intent is to ensure a common safety level in machinery placed on the market or put in service in all EU Member States and to ensure freedom of movement within the EU.

On 21 April 2021, the European Commission proposed to revise this Directive and turn it into a Regulation. The main aims of this revision are to align the new legislative act with EU harmonised legislation on product health and safety; tackle the challenges that may arise from technical progress in digitalisation; and solve divergences in interpretations.

DAVID AND GOLIATH

The preparatory work of this proposal started two years earlier and FIEC has been involved at a very early stage, namely through its active participation in the European Commission's experts' group on machinery. And a little bit like David and Goliath, it appeared that manufacturers were extremely vocal on this issue – for obvious and good



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The Machinery Directive

reasons – while the voice of the users seemed to be somewhat neglected.

Consequently, the current hot debates revolve a lot around the approach towards new technologies and in particular the level of risk coming from Artificial Intelligence; the procedure for assessing the conformity of machinery considered as high-risk (Annex I – formerly Annex IV of the Machinery Directive), which will automatically require a third-party assessment (by a notified body) and the new proposed approach to standards-setting, where the European Commission would play a central role.

On the other hand, there is broad support for the conversion of the Directive into a Regulation, which will facilitate uniform application across all European Union Member States; as well as to the alignment of the draft Regulation with the New Legislative Framework (NLF) as it provides coherence with other Internal Market and product safety legislative acts and improves horizontal transparency.

However, as the end goal of this piece of legislation is to ensure a high level of safety for the operators (ie construction operators), it is of the utmost importance to also take into consideration their needs and those of the contractors they are working for.

THE TECH EFFECT

In short, FIEC welcomes the revision of the Machinery Directive (into a Regulation), which takes into account the recent technological developments. The new aspects such as hazardous substances and cybersecurity are particularly welcome.

Regarding the new proposed definition of "substantial modification", we fear that this concept will create multiple interpretations and a high

increase of modifications made by the users which will require third-party assessment. Indeed, the end user of the machine, even though it is not explicitly named in the draft regulation, is also affected by the consequences of a substantial modification. As specified in Article 15, any operator making such a modification becomes the manufacturer with all the requirements of Article 10.

Therefore, FIEC advocates that only a change of specific application shall be considered as a substantial modification. The digital modification or update of safety devices and the installation of safety devices which lead to an increase of the safety level of the machine shall not be considered as substantial modifications and shall not require a new third-party assessment.

LEVELS OF RISK

For machinery embedding Artificial Intelligence (AI) systems ensuring safety functions, the proposed new Regulation says that the machinery shall have additional CE marking. It will be necessary to clarify what will be the process for the end user. Moreover, the European Commission proposes to classify such machinery as high-risk by default. This seems to be disproportionate, considering the current experience and the fact that it might be a break to further innovation in this field.

Ideally, Annex I on high-risk machinery products should be fully rewritten and present three categories of products, depending on their level of risk: low, medium, high. Then, three different conformity assessment procedures should apply according to the level of risk: internal production control, full quality assurance or EU-type examination.

Moreover, in the framework of the safety and reliability of control systems, it should be noted that storing all data for



...manufacturers were vocal on this issue - for obvious and good reasons - while the voice of the users seemed to be somewhat neglected."

five years is a real economic and organizational challenge for the end-user during the lifetime of the machinery. Therefore, question is how to ensure that market surveillance and national authorities will be able to check, in all situations, the traceability of machinery safety. Preferably, it should be the responsibility of manufacturers or software providers to store these data.

DIGITAL DEVICES

Last but not least, concerning instructions and their contents, clarifications are required regarding the EU declaration of conformity (in particular for digital devices) and the timetable for the application of the new provision must be specified and clearly defined. At least, it is crucial to ensure in practice the availability of the key documents of the machinery during all its lifetime and all successive uses in different construction sites.

As we are writing this article, stakeholders are still in the process of submitting amendments' proposals to the European Parliament. The vote within the relevant Committee (Internal Market and Consumers) is foreseen by mid-March. The vote in Plenary session has not been scheduled yet. We will come back to this issue again in this column. **ce**

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**CONSTRUCTION
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The future for rental is bright...and digital

The European Rental Association looks at the many ways digitalisation of the construction industry is enabling rental companies within Europe to deliver more for their customers

The commercial landscape is being transformed by the impact of digitalisation and the virtual delivery of products and services.

This transformation has accelerated during the COVID-19 pandemic with physical facilities such as shops, showrooms and rental locations being either closed or severely limited in their ability to engage with customers in a traditional business model, leading to a rapid rise in online business models and significant challenges for those businesses that have not embraced new digital ways of operating.

Digitalisation is not just about transforming a business's route to the market. It is as much about the collection, analysis and use of data, and using artificial intelligence to analyse data, to develop tailored offerings and micro-target existing and potential customers.

The European equipment rental industry is as much affected by this transformation as any other industry, and the digital transformation is a process that most companies are currently undergoing or will be facing in the near future. At the same

time, there are good examples of companies that have started on the digital journey and which could inspire others in the rental industry.

'SMART RENTAL'

The ERA Convention 2021: 'Smart Rental', held recently in Amsterdam, looked at ways in which data is improving the customer experience and how digital technologies are transforming rental businesses.

'Smart' rental companies are using data and digitalisation to deliver added value to their customers, helping them to better manage their projects, enabling them to work more efficiently and enhancing their safety:

- Telematics and GPS tracking reduce downtime and lower labour costs, make it easier to manage and monitor a fleet, and enhance the productivity of the equipment.
- Remote tracking means that rental companies can diagnose and repair equipment efficiently and effectively.
- The right data at the right time informs better decision-

ERA secretary general Michel Petitjean discussing the impact of digitalisation on construction equipment rental



making and helps optimise a jobsite, improving safety and productivity.

- Data benchmarking provides additional insights about how to improve and how to compare to the competitors.

Furthermore, digitalisation enables rental companies to provide a more efficient booking, delivery and billing service, with new ways of charging for the equipment use, from pay per service and pay as you go to stand by and pay per use.

Ultimately, this means that rental companies can provide a better customer experience with reduced costs, more efficient processes, improved safety and more productive equipment.

READY FOR DIGITAL TRANSFORMATION?

The current state of digital transformation in the rental industry can be defined as heterogeneous, with different companies and different markets going at different speeds. The digitalisation process has implications beyond commercial

and operational aspects of a business – be it human resources, information security, the Internet of Things and so on – and there is a need in the rental industry for clarity and awareness about what the process of digital transformation entails.

In recognition of this and to promote awareness, engagement and action within the rental industry, ERA is starting work on a new project on the impact of the digital transformation on the rental business.

The chief aim of this ERA project is to raise awareness among rental companies in Europe about the challenges and benefits of digital transformation and provide elements of best practice on the journey towards a successful digital transformation.

The project will be steered by ERA's Future Group and will be undertaken by epi Consulting. Because of its transversality, all ERA Committees will be involved in this project.

For more information, please do not hesitate to contact the ERA team at era@erarental.org. **CE**

About ERA

The European Rental Association was created in 2006 to represent national rental

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Safety First

Katrina Preston McDermott **of Pinsent Masons** looks at England's three Gateways plan for safer buildings

The Building Safety Bill is a new regulatory regime designed to ensure the fire and structural safety of buildings in England. The Bill was drafted in response to the Grenfell Tower tragedy and Dame Judith Hackitt's independent review of building regulations and fire safety. The Bill, when it becomes law, is expected to drastically change the regulatory landscape for the design and construction of "higher-risk buildings" which are over 18 meters or have 7 or more storeys.

The Building Safety regime will be overseen by the Health and Safety Executive (HSE). All projects involving higher-risk buildings will have to obtain approval from the HSE at three "Gateways" before work can proceed. The three Gateways are:

- **Gateway 1** – Before planning permission is granted.
- **Gateway 2** – Before construction begins.
- **Gateway 3** – Before occupation.

Each Gateway requires duty holders to demonstrate compliance with the building regulations by submitting a range of digital information, known as the "golden thread" to HSE. Each Gateway is a "hard stop" for the project (ie, the project cannot proceed until HSE approval is obtained).

In this article, we will set out an overview of the duty holder obligations and golden thread requirements for each Gateway along with some practical steps that can be taken in preparation for the new building safety legislation.

GATEWAY 1 – Planning Permission

Gateway 1 applies to applications for planning permission made on or after 1 August 2021. Planning applications for higher-risk buildings must be accompanied by a Fire Statement. The Fire Statement should address information about fire service access and water availability, fire strategy for the building, and details of evacuation strategy, and fire suppression systems. The time limits within the planning legislation apply at Gateway 1.

GATEWAY 2 – Construction

HSE must approve the detailed design of a higher-risk building before work can commence. The client (or someone on the client's behalf) must submit an application for a building control approval and obtain approval for the application.

The application must contain an overview of the height, number of storeys and use of each story of the building. It must confirm the details of the principal contractor and principal designer. The application must also be accompanied by various documents listed in the draft Building (Higher-Risk Buildings) Regulations 2022 (Regulations).

HSE must determine the application within 12 weeks, or such longer time as is agreed with the applicant. HSE can refuse the application if it does not contain sufficient information to allow the regulator to determine whether the change complies with the building regulations, creating significant

potential to extend these timescales. HSE can also attach conditions to their approval and can impose requirements to notify them (within 5 days) of the works reaching a particular stage, or not to cover up work for a specified period. Once approval has been obtained, the client must give HSE two days' notice before starting work.

GATEWAY 3 – Occupation

Gateway 3 is at completion. This is a "mixed" gateway involving requirements for the completion of the building work, and requirements to allow the safe occupation of the building. Once construction work is completed, the client must issue a completion notice to HSE and make an application for a completion certificate. In order to obtain the certificate, various documents need to be submitted as listed in the draft Regulations and the Bill.

HSE has twelve weeks to determine an application for a completion certificate. They must undertake an inspection before issuing a completion certificate. It is possible to apply for a partial completion certificate to allow occupation of part of the building. The detail of the regime during occupation is contained within the Bill.

PRACTICAL CONSIDERATIONS

Gateway 1 has already come into force. It is likely that the other two Gateways will come into effect either late in 2023 or early 2024. Preparation for the new legislation should be a key priority as many projects commencing now will be caught by the new regime. Some practical steps that can be taken are:

- 1 **Bidding stage** – when bidding for projects, consider the Bill and Regulation requirements, in particular, the "golden thread of information". Identify

“Every project involving higher-risk buildings will have to obtain approval from the HSE at three 'Gateways' before work can proceed.”

who will do what and engage appropriately with the supply chain in relation to the respective relevant roles.

2 Clear contractual obligations

– ensure the contract clearly sets out the contractual obligations relating to each Gateway, so the parties are aware of where the risk lies. This should help reduce the risk of disputes.

3 Keep records

– ensure the contract has adequate record-keeping provisions. To comply with the "golden thread of information" requirement, it will be important for all project parties to work together and retain key documentation (e.g., copies of contracts, design drawings, project schedules, meeting minutes, email communications, insurance records, safety reports etc.) for a longer period than currently might be the case. Parties should also ensure that systems are in place to maintain data, keep records and share these records with other construction parties.

CONCLUSION

Whilst this is an evolving regime and further guidance is expected to be released on the Bill and Regulations, there are clear steps parties can take now to ensure compliance. Parties should be aware that each Gateway is a "hard stop" and so any failure to demonstrate compliance could result in a high-risk building being unable to pass through a Gateway, or if it is a completed high-risk building, those accountable persons being sanctioned with financial and criminal penalties.

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About Pinsent Masons

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