# europe 2019-20 BUSINESS AND MARKET REPORT

THE DEFINITIVE GUIDE TO THE EUROPEAN CONSTRUCTION SECTOR



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## We can only look forward to the future

#### Construction Europe editor Mike Hayes gives an overview of the construction landscape in 2020

his year's report highlights the fact that we can expect 2020 to be at least as challenging as 2019 (probably more so), but also that the construction industry in Europe is in relatively good shape, having hopefully learned valuable lessons from the financial crisis of a decade ago.

The growth in construction output is unarquably declining, but recession on a European scale, is not forecast.

Looking ahead, in fact, one has to be both optimistic and even a little bit excited; the modus operandi of Europe is on the cusp of major change, through the advancement of technology and the general realisation that the planet's resources need to be preserved.

These are lofty ideals, but there is also practicality in using the tools at our disposal to operate in a more efficient and productive, as well as a less wasteful way.

#### A LARGELY HEALTHY PICTURE

Turning to the business of today, if we plot the line of productivity for Europe's construction industry, it will almost invariably follow just behind the GDP curve.

With this in mind, we can say with some confidence that we are at the

top of the productivity cycle, with GDP growth in Europe already declining - from a high of 2.9% in the summer of 2017, to the average 2.0% of the summer of 2018, and slipping to 1.4% in July of this year.

In the eurozone, this flattening is now being seen in the construction industry; while building construction fell by 1.0% in September 2019, compared with September 2018, civil engineering increased by 1.1% in the same period.

The picture was a little healthier across the 28 EU member states, where building construction remained unchanged, while civil engineering rose by 2.4%.

Some of the highest increases seen within EU member states, came from Romania (+28.9%), Hungary (17.8%) and Bulgaria (+6.9%).

The largest decreases were recorded in Spain (-10.0%), Slovenia (-8.1%) and France (-2.6%).

In the UK, civil engineering activity has seen its biggest fall in output since the global financial crisis.

As this article is written, the uncertainty that still surrounds Brexit is exacerbating an already challenging situation, putting at risk projects such as High-Speed 2 (the largest infrastructure project currently underway in Europe) and the Heathrow Airport expansion.

Questioned about the downturn, Tim Moore, economics associate director at IHS Markit, said construction firms had "voiced concerns about the uncertain outlook for large-scale infrastructure

projects upon which growth is expected to rest in the coming years".

In Germany, the sector has seen some recent growth and is likely to hit 9% by year end. If this uplift is borne out, construction will be the biggest driver of growth in the country's economy.

Moves to remedy a long-term housing shortage should see residential construction grow by 9%, while business construction is expecting 7.5%

This year's tax rises are also expected to lead to growth in nonresidential construction, with the government planning to renew as well as repair schools and other educational buildings.

In France, the environment for construction is more challenging, with growth expected to have fallen to 0.3% by the end of 2019.

That said, civil engineering is somewhat bucking the trend, with growth expected to reach 3% by the end of 2019, then continue into 2020.

The main driver for this growth will come from local government spending, with some very large projects accounting for a sizeable chunk of output, including the huge Grand Paris project, plus plans for highspeed broadband and an anticipated boost to motorway development.

In October 2019, the construction purchasing managers' index rose to

44.2 from 43.3 in the previous month. While this sounds positive, it should be noted that 50.0 is the line separating economic growth from contraction, and 44.2 is significantly below the line.

#### **EU INVESTMENT FUND**

That said, there is a significant ray of hope in Europe and that is the so-called Juncker Plan, the European Commission's fund aimed at encouraging major European investment in civil construction projects.

Working with its strategic partner, the European Investment Bank, the Commission established the European Fund for Strategic Investments (EFSI), to support, among other things, infrastructure and energy projects.

EFSI originally earmarked a little over €300 billion for major European projects, but it was later upgraded to EFSI 2.0, and a subsequent budget increase took its value to a cool half a

This fund is now beginning to turn proposals into projects, and will continue to do so in the short and medium term.

Furthermore, Ursula von der Leyen, who became president of the European Commission in December, has presented her New Green Deal, through which we can

> more sustainable construction practices. This will be seen as a hammer blow to profitable business by some developers and contractors, but, I would suggest, as a new opportunity for differentiating the best from the rest by those with a forward-looking can-do attitude. Ce

expect to see an accelerating shift towards





## A review of 2019

A look at the major business events of the year in Construction Europe includes the record-breaking Bauma exhibition in Munich and the allocation of significant EU funding.

#### **JANUARY**

- Salini Impregilo made "a non-binding preliminary demonstration of its interest" to fellow Italian contractor Astaldi, having previously said it was closely following developments at the company following the recent announcement that Astaldi had filed for protection from creditors. According to Salini Impregilo, the non-binding interest was declared to the company and to the Commissioners appointed by the Court, "concerning activities connected to the construction sector, to continue the in-depth analyses aimed at assessing the potential of an industrial integration, consistently with its financial objectives."
- Construction software firm Bentley Systems acquired two companies - one in Slovakia and another one in Canada. Bentley, which produces comprehensive software solutions for design, construction and operation of infrastructure, bought ACE Enterprise Slovakia, which it described as a provider of innovative technology solutions to interface with enterprise resource planning (ERP), enterprise asset management (EAM), and geographical information systems (GIS). Bentley also acquired Alworx Inc based in Quebec City, Canada - a provider of machine learning and internet of things (IoT) technologies and services.

#### **FEBRUARY**

- UK-based contractor Laing O'Rourke agreed terms with its financial partners for the 2019 refinancing of its UK business, which delivers new banking facilities until 2022. In October 2018, the group said it had completed a successful turnaround, and it completed the refinancing of its Australian business in mid-2018. The UK arrangements were agreed over the Christmas period, and Laing O'Rourke said at the time that they were being taken through final credit approval protocols and documentation by each lender organisation.
- Polish contractors listed on the Warsaw Stock Exchange (WSE) showed negative profitability for the fourth consecutive quarter, according to a report by research company Spectis. The aggregate net profit of the 22 contractors listed on the WSE came to a total of PLN 170 million (€39.58 million) in the third quarter of 2018. Although this compared to net profit of PLN 162

million (€37.72 million) registered in the corresponding period of 2017, it was said that the positive performance did not mean that the construction industry's financial standing was robust because the companies usually deliver positive results in the third quarter of the year.

#### MARCH

- At a meeting of German machinery manufacturers, senior figures agreed that construction's positive outlook must not be jeopardised by potential political chaos in Europe. Among other things, the outcome of a no-deal Brexit, and the possible disintegration of the European Union were discussed. Joachim Strobel, chairman of the construction machinery specialised group within the VDMA, said, "Europe is currently putting its own competitiveness at risk. We must stop this development."
- Meanwhile, Volvo Construction **Equipment** reported that 2018 had been its strongest year ever, with sales up 21% in the fourth quarter.

#### **APRIL**

■ In France, the state-owned development company, Société du Grand Paris,

- announced plans to invest €3.5 billion in its Grand Paris project in 2019, a 40% increase on the previous year's figure. The uplift to what was already understood to be the largest public transportation and infrastructure project in Europe is set to continue into 2020, with some €4.5 billion investment forecast, amounting to a further 30% increase.
- The news was not so good in Hungary, where three of the country's research companies reported that momentum in the construction industry had slumped in the second half of 2018, despite it being a record

#### MAY

- In the May issue, we reported that more than 620,000 visitors from over 200 countries had attended a record-breaking Bauma exhibition in Munich. The show's organisers said international visitor numbers had risen to a cool quarter of a million, including a 'significant rise' in Chinese attendees.
- Meanwhile, under its Cohesion Policy, the European Commission (EC) announced the adoption of €4 billion of investment for infrastructure projects across 10 member

MARCH Caterpillar reported that its fourth quarter 2018 results had seen an increase in sales and revenue of 11% to €12.63 billion, compared with €11.39 billion in the fourth quarter of 2017. The company said the EAME region (Europe, Africa and the Middle East) had seen sales increase 9%. Infrastructure, road and non-residential building construction activities were said to be behind higher demand in Europe.



states. The funds, it said, were to go to projects including transport links, affordable energy, drinking water improvements and healthcare. The countries set to receive investment for projects are Bulgaria, Czechia, Germany, Greece, Hungary, Italy, Malta, Poland, Portugal and Romania. The largest project will take place in Romania, where €1 billion was set aside to upgrade the ring road around the capital Bucharest. The funding will also support the construction of a 51km section of the new Bucharest Orbital

#### **JUNE**

- UK-based Galliford Try has announced a strategic review of its construction business, with a view to downsizing. The move followed a warning issued by the company that its pre-tax profit for the full year could be as much as £40 million (€46.5 million) below the expectations of market analysts. The construction and infrastructure specialist said its review would affect profitability this year, due to a combination of restructuring costs, adverse settlements and increased costs on a number of current projects - primarily the €1.5 billion Queensferry Crossing.
- At the same time, a combined report from the UK Government's **Department** for Business, Energy and Industrial **Strategy** and the **Construction Equipment** Association (CEA) ranked the UK construction sector number one in Europe, reporting a 24% market share. The figures referred to 2018, when the UK was the largest producer of construction equipment in Europe and the 5th largest in the world, producing over 60,000 units. Revenues of around €15.13 billion were generated from sales of these machines.

#### **JULY**

- French contractor **Eiffage** partnered with consultancy firm Impulse Partners, to roll out Sekoya, a carbon and climate platform dedicated entirely to low-carbon materials and processes. Eiffage said that, with climate change becoming a reality, it was fully committed to a low-carbon strategy. The group said it intended to lead the way with its own emissions, but also wanted to support its customers in reducing their own carbon footprints. It said it could achieve this by developing alternative solutions and incorporating them into its offers.
- Equipment sales analyst Off-Highway **Research** released its wide-ranging overview of the global market. In it, the organisation said the reason for growth in all major European markets went beyond the improving economic growth in the region. It described strong residential construction activity, particularly in Germany; reform in France in the form of 2015's 'Macron Law'; recovery in the southern economies, hit hardest by the global crisis; a climate of low interest rates and a good number of significant infrastructure initiatives.

**OCTOBER As part of World Green** Building Week, the World Green Building Council issued a new vision for how buildings and infrastructure around the world can achieve 40% less embodied carbon emissions by 2030, and achieve 100% net zero emissions buildings by 2050. Building and construction are responsible for 39% of all carbon emissions in the world, with operational emissions (energy used to heat, cool and light buildings) accounting for 28%.

#### **AUGUST**

- Chinese equipment manufacturer Guangxi **LiuGong Machinery** announced that would acquire UK-based company Construction Plant & Machinery Sales, Southeast (CPMS).
- **LiuGong** signed a share purchase agreement to acquire the business operations of CPMS, saying it would serve as the company's exclusive dealership for England, Wales and Scotland.
- Meanwhile, the average salary across the UK construction industry was reported to have risen 9% to €51,377, despite less vacancies being advertised. The information was drawn from a review of the 12-month period following 30 May 2018, by recruitment firm Randstad Construction, Property and **Engineering**, which analysed around 6,800 permanently placed construction jobs in the country.

#### SEPTEMBER

- In Germany, the government approved a plan to spend €86 billion to upgrade the 33,000km Deutsche Bahn rail network. Transport minister **Andreas Scheuer** called the project "the biggest railway modernisation programme" in the country's history.
- French contractor and concessions company **Vinci** announced a revenue increase of 10% for the group, with consolidated revenues totalling €21.7 billion. German engine maker Deutz also released its results for the first half of the year, reporting a 5.9% year-on-year rise in revenue.

#### **OCTOBER**

- CNH Industrial announced a five-year plan, in which its on-highway and offhighway assets would be split into two discrete businesses. The company said the decision was the businesses were being "impacted differently by the accelerating industry megatrends of digitalisation, automation, low/zero emission propulsion and servitisation".
- In the **UK**, The CEOs of 22 major construction companies wrote to the chairman of the HS2 (High Speed 2) review committee, Doug Oakervee, warning of



the ramifications of cancelling the project, which is currently expected to cost more than €100 billion. The chief executives said in the letter, "If HS2 is cancelled now, future construction projects across the piece will unfortunately attract an added risk premium. UK construction will cost more."

#### **NOVEMBER**

- A report from the **SaMoTer-Prometeia Outlook** said investments in the Italian construction sector are growing, with a 3.5% year-on-year rise expected by the end of 2019. The publication concluded that the resumption of public works was largely responsible for the increased investment, which equates to approximately €4.8 billion.
- Topcon Positioning Systems and Bentley **Systems** got together to promote the process they called "constructioneering". The two companies said the practice would enable engineers to begin work with an accurate 3D model of current construction site conditions – as captured by Topcon's drone photogrammetry and laser scanners which then could be processed into engineering-ready 3D reality meshes by Bentley's ContextCapture software.

#### **DECEMBER**

- Nuclear engineering organisation **Assystem** reported 21.1% growth in revenues from its nuclear activities for the first nine months of 2019. The company's financial results showed that it made €220.5 million from business operations in the Middle East, the United Kingdom and France, which was responsible for more than half of the growth.
- Energy company EDF estimated the cost of constructing six latest-technology nuclear reactors in France at €46 billion. The company, which currently has a reactor under construction at the Flamanville nuclear power plant in France, plus another at the Hinkley Point C plant in the UK, estimated each of the next-generation reactors would cost between €7.5 billion and €7.8 billion to build. The current cost of the under-construction Flamanville reactor in France, however, is approximately €12.4 billion.



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year of positivity has been seen throughout 2019 for the construction industry. In fact, it isn't just the industry that has benefitted but, generally, the global economy as a whole.

The Dow Jones, Nikkei 225, CAC 40 and Dax Xetra all rose by over 20% in value over the 52-week period. Considering the impact of Brexit on the UK economy, the UK's FTSE100 market was also relatively strong in terms of growth percentage, 13% over the year.

Perhaps reflecting this strong

economic performance, the total CE share index value represents a growth of 31.79% for the year. In 2018, only a handful of listed companies saw a positive share growth during the year - all of them being contractors - but in 2019, 51 out of 65 companies ended the year with increased share prices.

#### THE BEST PERFORMERS

The materials producer segment proved the best performing as it collectively had the biggest increase in share value. At 41.65%,

the CEM Index figure highlights how important the year has been for companies in this field. In 2018, the CE materials figure stood in stark contrast, falling in value by 23.83%.

The top of the table for 2019 is Schneider Electric, a French multinational corporation specialising electrical equipment. The company boasts a share growth of 57.74% over the year and as we arrive into 2020, some might see it as a sign of the times that a company priding itself on delivering green energy solutions has taken the crown as CE's highest performing listed stock.

The company has been championing a campaign for the collaboration of what they call the "consumer's green decentralised energy future needs" throughout the year in a bid to boost global sustainability.

Schneider Electric also intends to make good use of new technologies such as the Internet of Things, energy storage, artificial intelligence (AI) and blockchain as part of a prosumer movement to benefit the end user.

Just under half of the top 15 companies, according to percentage change, were companies in the materials sector, with the next best performing sector belonging to the contractors taking six places in the top 15.

Despite a lesser number of Original Equipment Manufacturers (OEMs) placing high on the table, the year was still a positive one for OEMs.

Specialist forecasting company Off-Highway Research suggested that in 2018, the sale of construction machinery reached >

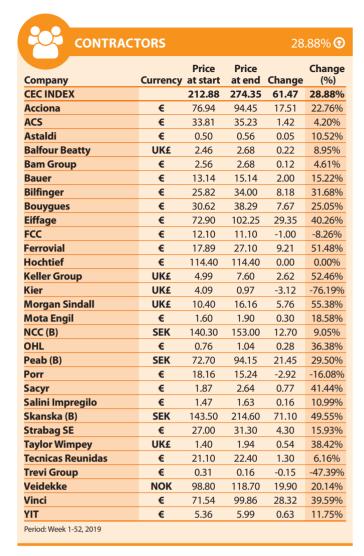
41.65% ①

<b>EQUIPMENT MANUFACTURERS</b>	25.90% <b>①</b>
 EQUI MENT MINITOTACTORENS	23.5070
EQUIL MENT MANUTACTORERS	23.70 /0 😉

		Price	Price		Change
Company	Currency	at start	at end	Change	(%)
CEE INDEX		281.06	353.85	72.79	25.90%
Astec Industries	US\$	32.19	41.95	9.76	30.32%
Bell Equipment	ZAR	12.65	9.25	-3.40	-26.88%
Caterpillar	US\$	121.51	148.22	26.71	21.98%
CNH Industrial	€	7.92	10.00	2.08	26.26%
Deere	US\$	144.05	175.22	31.17	21.64%
Doosan Infracore	WON	7,480	5,460	-2,020	-27.01%
Epiroc (A)	SEK	84.13	117.40	33.27	39.55%
Haulotte Group	€	8.93	5.28	-3.65	-40.87%
Hitachi CM	YEN	2,419	3,315	896	37.04%
Hyundai CE	WON	45,500	30,250	-15,250	-33.52%
Kobe Steel	YEN	754	591	-163	-21.62%
Komatsu	YEN	2,288	2,661	373	16.30%
Kubota	YEN	1,530	1,736	206	13.46%
Manitou	€	21.25	21.60	0.35	1.65%
Manitowoc	US\$	14.72	17.24	2.52	17.12%
Metso	€	22.99	35.86	12.87	55.98%
Palfinger	€	22.25	29.45	7.20	32.36%
Sandvik	SEK	125.65	187.40	61.75	49.14%
Tadano	YEN	1,003	1,002	-1	-0.10%
Terex	US\$	26.88	30.08	3.20	11.90%
Volvo (B)	SEK	117.20	160.05	42.85	36.56%
Wacker Neuson	€	16.73	17.10	0.37	2.21%
Period: Week 1-52, 2019					

Price Price Change at end Change Currency at start Company (%) **CEM INDEX** 150.93 213.79 41.65% Buzzi Unicem (Ord) € 15.03 22.34 7.31 48.64% Cemex (CPO) MXP 9.58 7.23 -2.35 -24.53% CRH 23.43 36.27 12.84 54.80% € HeidelbergCement € 53.82 64.88 11.06 20.55% Ferguson UK£ 4974.50 7034.00 2059.50 41.40% Kone (B) 40.44% € 42.11 59.14 17.03 LafargeHolcim 36.00 53.90 17.90 € 49.72% Saint-Gobain 29.17 37.09 27.13% Schindler (BPC) **CHF** 187.30 240.40 28.35% 53.10 Schneider Electric 57.74% 58.64 92.50 33.86 Titan Cement Int. (Common) € 19.84 19.00 -0.84 -4.23% Vicat Group (Common) 42.30 40.15 -5.08% Wienerberger 18.24 26.60 8.36 45.83% € Period: Week 1-52, 2019

**MATERIALS PRODUCERS** 



the cyclical peak as demand rose to 178,394 units sold in Western Europe. In 2019, however, demand has not been as prominent, but is still high as it represents as it falls only 3% on the previous year.

Proving successful this year, after falling 21.94% in value last year, crushing and screening specialists Metso take the second spot on the list with an increase in share value throughout 2019 of 55.98%. The company has attributed its key shareholder growth with its chosen market strategies in minerals and flow control.

Reportedly, in April, Finnish firm began developing a demerger plan with fellow national firm Outotec and has agreed that the Metso Minerals brand will join the latter to create a new company.

This action of creating Metso Outotec will according to the two companies "leverage the strengths of both companies including technology and R&D [research and development], product and process excellence, scale and global service offering footprint."

The companies also added that the combination of the two will deliver significant benefits to all stakeholders and an Extraordinary General Meeting was held in October approving the plans.

The third best performer over

With many grand projects currently underway, 2019 has undeniably been a more stable year than some predicted

the year was also the highest performing contractor. UK based Morgan Sindall experienced a large gain in share value over the year, rising by 55.38%.

In 2018 the company featured number 33 on the list after falling by 25.55% in share value despite a group revenue for the year of £3 billion (€3.53 billion) and posting a record pre-tax adjusted profit of £81.6 million (€95.96 million) although, at the time, Brexit uncertainty was at its

In 2019 the company's first half year results were in line with the previous year's revenue at £1.4 billion (€1.65 billion). Adjusted pre-tax profit was also said to be up by 20% for the half-year period on a year-on-year basis to £36.3 million (€42.69 million).

Recently the British firm was appointed to construct four lots on the new £1 billion (€1.17 billion) South East and Mid Wales collaborative construction framework (SEWSCAP).

The four-year framework will be used by more than 20 Welsh councils and public bodies for

-3.21%

schools, leisure facilities and municipal buildings. Morgan Sindall's portion of the contract is said to be valued at up to £140 million (€164.4 million).

#### **CONTRACTUALLY SOUND**

The CE contractor index (CEC Index) saw a rise of 28.88% in 2019, a far improved percentage change on the 2018 figure of -18.21%. During 2019, 25 of the listed contractors saw a growth in share price with one, Hochtief, retaining the same figure start figure as it had during the first week of the year.

Four listed contractors suffered falling prices over the year, two of which sustained vast drops in value, UK-based Kier Construction ended the year a lot poorer in the eyes of investors as it slid by a dramatic 76.28% over the year.

On 3 June the UK company endured a drop in share price of 42.4% following on from its announcement of a profit warning in which it informed its stakeholders that the company expected to fall short of its predicted profit by £40 million (€45.18 million).

Not only did the company suffer in terms of its bottom line, but it also struggled with clear direction from the top as ex-Kier boss Haydn Mursell left the company suddenly at the beginning of the year. It took two months before a new CEO, Andrew Davies, was appointed.

It was reported that Davies was due to take the top job at fellow UK firm Carillion just one week before its collapse in 2018. Now, with Kier dropping just over three quarters in share value since January, the new CEO looks to be presiding over what has been dubbed by speculators as the next Carillion.

The penultimate company on the list, with the second poorest performance this year was yet another contractor. Italian construction company Trevi group >

VALUE OF EURO										
	Beginning of period	End of period	Change	Change (%)						
RESERVE CURRENCIES										
British Pound	0.8999	0.8541	-0.0458	-5.09%						
Japanese Yen	123.18	121.65	-1.52	-1.24%						
Swiss Franc	1.1257	1.0895	-0.0362	-3.21%						
US Dollar	1.1400	1.1101	-0.0299	-2.62%						
		EUROPEAN CURRENCIES								
British Pound		0.0541	0.0450	F 000/						
	0.8999	0.8541	-0.0458	-5.09%						
	1.9558	1.9560	0.0002	0.01%						
Czech Koruna										
Bulgarian Leva Czech Koruna Danish Krone	1.9558	1.9560	0.0002	0.01%						
Czech Koruna	1.9558 25.608	1.9560 25.459	0.0002 -0.1486	0.01% -0.58%						
Czech Koruna Danish Krone	1.9558 25.608 7.4678	1.9560 25.459 7.4681	0.0002 -0.1486 0.0002	0.01% -0.58% 0.00%						
Czech Koruna Danish Krone Hungarian Forint	1.9558 25.608 7.4678 321.25	1.9560 25.459 7.4681 331.47	0.0002 -0.1486 0.0002 10.2188	0.01% -0.58% 0.00% 3.18%						
Czech Koruna Danish Krone Hungarian Forint Norwegian Kroner	1.9558 25.608 7.4678 321.25 9.8725	1.9560 25.459 7.4681 331.47 9.8606	0.0002 -0.1486 0.0002 10.2188 -0.0120	0.01% -0.58% 0.00% 3.18% -0.12%						

1.1257

1.0895

-0.0362

**Swiss Franc** 

Period: Week 1 - 52, 2019



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#### **RANKING BY 2019 SHARE PRICE (% CHANGE)**

	COMPANY		CHANGE (%
1	Schneider Electric	M	57.74%
2	Metso	E	55.98%
3	Morgan Sindall	С	55.38%
4	CRH	M	54.80%
5	Keller	C	52.30%
6	Ferrovial	С	51.48%
7	Lafarge Holcim	M	49.72%
8	Skanska B	C	49.55%
9	Sandvik	E	49.14%
10	Buzzi Unicem	M	48.64%
11	Wienerberger	М	45.83%
	Index	M	41.65%
12	Ferguson	M C	41.40%
13	Sacyr		41.18%
14	Kone (B) Eiffage	M 	40.44%
15	Vinci	C	40.26%
16		E	39.59%
17	Epiroc (A)		39.55%
18 19	Taylor Wimpey Hitachi CM	C E	38.57%
		C	37.04%
20	OHL Volvo (P)		36.84%
21 22	Volvo (B) Palfinger	E	36.56%
		E	32.36% <b>31.79</b> %
23	( <b>Total)</b> Bilfinger		
	<del>-</del>	C E	31.68%
24	Astec Industries Peab B		30.32%
25 CEC	ndex	C	29.50%
26	Schindler (BPC)	M	<b>28.88</b> % 28.35%
27	Saint-Gobain CNH Industrial	M E	27.15%
28		E	26.26%
	ndex		25.90%
29	Bouygues	С	25.05%
30	Acciona	C E	22.76%
31 32	Caterpillar	E	21.98%
33	Deere		21.64%
	Heidelberg Cement	M	20.55%
34 35	Veidekke Mota Engil	C	20.14%
36	Manitowoc	E	18.75% 17.12%
			16.30%
37	Komatsu	E C	
38	Strabag SE	C	15.93%
39 40	Bauer	E	15.22%
	Kubota		13.46%
41	Astaldi	C	12.00%
42	Terex	E	11.90%
43	YIT Calini Imanananila	C	11.75%
44	Salini Impregilo		10.88%
45 46	NCC B Balfour Beatty	C	9.05%
46 47		C	8.94%
47 48	Tecnicas Reunidas	C	6.16% 4.69%
	Bam Group	C	
49	ACS Wasker Neusen	E	4.20%
50	Wacker Neuson		2.21%
51	Manitou	E	1.65%
52	Hochtief	C E	0.00%
53 54	Tadano Titan Coment		-0.10%
54	Titan Cement	M	-4.23%
55	Vicat Group	M	-5.08%
56	FCC	С	-8.26%
57	Porr Koha Staal	C	-16.08%
58	Kobe Steel	E	-21.62%
59	Cemex	M	-24.53%
60	Bell Equipment	E	-26.88%
61	Epiroc (A)	E	-27.01%
62	Hyundai CE	E	-33.52%
63	Haulotte Group	E	-40.87%
61	Trevi Group	C	-48.39%
64 65	Kier	C	-76.28%

experienced a 48.39% shortfall during 2019.

The company has been suffering with amassing debt and in April last year appealed to the Court for a blank settlement request to recapitalise Trevi and restructure the business to help manage its debt.

Last December the group's board of directors also decided to take the step to "discontinue the communication to the public of the additional financial information relating to the first and third quarter, with effect from the next financial year 2020". This measure was said to be taken to give the company's administrative structure time to focus on its extraordinary financial restructuring.

The next four lowest performers were all OEMs; French aerial platform manufacturer Haulotte Group (-40.87%), Japanese Hyundai Construction Equipment (-33.52%), Swedish manufacturer Epiroc (-27.01%) and South Africa-based heavy plant manufacturer Bell Equipment (-26.88%).

Despite these companies clearly having a negative effect on the CE Equipment Index (CEE Index) figure, the positive movers in the OEM category outweighed the negatives, leaving the CEE figure posting a respectable 25.90% increase over the year. In total there were 22 listed OEMs, 16 of which saw an increase in share value, the remaining six all experienced declines.

#### IN GOOD HEALTH

In the material producer segment ten of the 13 companies that were assessed ended the year with a higher stock market valuation, whilst the final three fell in value.

For the contractors, of the 30 companies that were listed 25 grew in value, one stayed the same value as it began the year in January and four fell in value.

During the final month of 2019 (weeks 48 to 52), the listed UK contractors including Kier all grew in response to the new Brexit reassurance afforded by the elected majority Conservative government.

Balfour Beatty (+19.45%), Keller group (+19.31%) and Morgan Sindall (+13.01%) were the best performing companies for the month. Even Kier group experienced a small relief from its vastly diminished price as it gained an extra 6.47% in added value.

It seems that the era of political uncertainty for the UK construction industry is over leaving commentators hoping that this will lead to a renewed faith in Construction and trade throughout Europe.

What seems less certain is the future of Italian construction. The three main companies said to be linked to Projetta Italia (project Italy) - Salini Impregilo's plan to create one united construction company within Italy that will be capable of bidding for large contracts on an international scale consisting of Salini Impregilo, Astaldi and Trevi group, have all fallen in value toward the end of 2019.

As is often the case, companies generally increased in share value during December, leaving the end of 2019 trending to the positive.

With many grand projects currently underway, 2019 has undeniably been a more stable year than some predicted. As we move into 2020 it will be interesting to see how new projects unfold, how new tech can affect company bottom lines and what impact government directives will have on Ce construction.

KEY INDEXES 128.22%							
Index	Change	Change (%)					
(Equipment)	281.06	353.85	72.79	25.90%			
CEM (Materials)	150.93	213.79	62.86	41.65%			
CEC (Contractors)	212.88	274.35	61.47	28.88%			
<b>■ CET (Total)</b>	206.17	271.71	65.54	31.79%			
Dow	22,686	28,645	5,959	26.27%			
FTSE 100	6,765	7,645	880	13.00%			
Nikkei 225	19,562	23,838	4,276	21.86%			
CAC 40	4,674	6,037	1,363	29.18%			
DAX Xetra	10,598	13,337	2,739	25.85%			
Period: Week 1-52, 2019							

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## **Short-term pain**

Scott Hazelton of market intelligence group IHS Markit looks at the economic prospects for the eurozone throughout 2020 and bevond

urozone real GDP increased 0.2% g/g in the third quarter of 2019, matching the modest second-quarter performance and surpassing consensus expectations of just 0.1% g/g growth. The main reason for this better-than-expected outcome was Germany's 0.1% result instead of a widely anticipated second successive economic contraction that would have put the country into a technical recession. A mix of indicator data for October/November and mixed 'hard' activity for September (rebounding exports and manufacturing orders, but relatively weak production and retail sales) argue for diminishing recession risks but no rebound yet.

Admittedly, global uncertainty levels linked to trade conflicts and the Brexit standoff have declined during the past two to three months, especially as signals of a truce have emerged in the US-China trade war and US tariffs on European cars have become less likely. Nevertheless, the manufacturing sector will continue to struggle in the near term as structural headwinds pose an additional constraint, most notably with respect to the long-term transformation in the automobile sector towards electric vehicles and selfdriving cars amid ever stricter environmental regulations.

Our latest real GDP growth forecasts for 2019 and 2020 have been raised slightly for both the eurozone (to 1.2% and 0.9%, respectively) and the UK (to 1.3% and 0.5%, respectively). Quarterly growth will rather strengthen slightly as 2020 progresses. The phenomenon that the European Central Bank (ECB)'s September decision to deliver additional monetary policy stimulus actually led to less negative longterm interest rates is indicative of improving

optimism about growth prospects.

UK developments are dominated by Brexit considerations, both in the short term (risk of a corrective slump in imports in late 2019 following precautionary stockpiling ahead of the interim end-October Brexit deadline) and in the long run (threat of emerging regulatory divergence between the EU and UK requiring new custom checks and increasing trade frictions despite eventual agreement on a free-trade treaty).

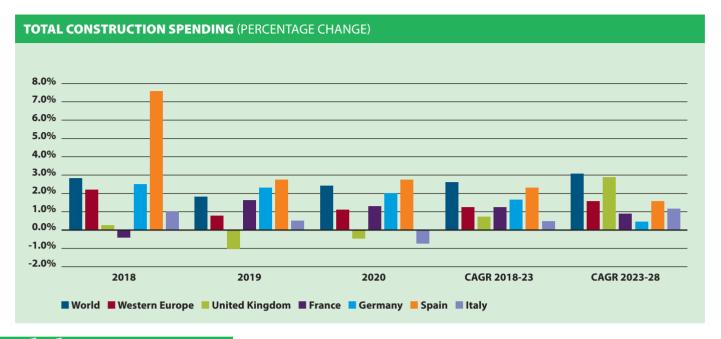
Our probability of a disorderly Brexit has retreated notably to around 15% after the House of Commons approved Boris Johnson's new Withdrawal Agreement in October, alongside a law to rule out a no-deal Brexit. However, the risk of a no-deal scenario at the end of the transition period (December 2020) persists, which should also be assigned a 15% probability. The UK government wants a free-trade deal with regulatory independence, which suggests that the trade talks will be challenging and that an agreement might not be ready by end-2020.

Germany's government seems increasingly willing to loosen the fiscal purse strings some more, although less with the intention to deliver short-term fiscal stimulus to avert a recession but more due to the acknowledgment that investment needs to be stepped up to improve public infrastructure and to speed up the implementation of measures to combat climate change.

The outlook for Western European construction is similar to that for its economy moderate growth with a slowing trend. Real construction spending expanded 2.2% in 2018, but likely fell to 0.8% growth in 2019, with only modest acceleration to 1.1% and 1.3% for 2020 and 2021 respectively.



#### **GROWTH RATES FOR MAJOR EUROPEAN CONSTRUCTION MARKETS (PERCENTAGE CHANGE)** 2.5% 2.0% 1.5% 1.0% 0.5% 0.0% 2019 2020 ■ Residential ■ Non-residential Structures ■ Infrastructure



The UK government wants a free-trade deal with regulatory independence, which suggests that the trade talks will be challenging..."

Residential will remain the fastest growing construction segment in 2020, led by Spain (4.5%), Ireland (3.8%), Greece (3.6%) and Finland (2.7%). Germany follows with 2.1% growth as income gains fuel home improvements, although its demographics preclude a boom in new construction. Spanish and Greek growth reflect continued improvement from delayed recoveries post-Great Recession, but also reflect rising real incomes and, in the case of Spain, past tax cuts which have elevated demand for housing and put upward pressure on prices. Ireland is a prime beneficiary of Brexit, particularly from the financial sector. The large UK residential market will contract once again in 2020 (-0.7%) and Brexit induced doldrums will allow compound annual growth of just 0.6% over the next five years.

At 1.8% growth, non-residential structures had another decent performance in 2018. However, weakening export markets, particularly in Germany, will hold growth to 0.8% in 2019 and 2020 and 1.1% in 2021. In general, northern Europe leads nonresidential structure growth; compound annual growth over the next five years features Finland at 3.9%, Ireland at 3.4%, Austria at 2.8% and Denmark and the Netherlands at 2.1%. Importantly, German growth manages only 1.5% and the UK is even weaker at 0.2%. Outside of northern Europe, the growth leaders feature recovering Greece and Spain,

Infrastructure spending is subdued with an outlook of 0.4% growth for 2019 and just a 1.3% compounded average over the next five years. Western European governments remain strapped for investment funds given the cost of social programs and only modest revenue growth. Finland (4.2% CAGR) leads this segment, followed by Ireland (3.8%), and Norway (3.5%). The middle of the pack features the UK (2.1%), the recovering economies of Greece (2.0%) and Portugal (1.7%) and Germany (1.8%). Sweden (-1.4% and Italy (-0.2%) are the only countries expected to contract in 2020, with continued diminished expectations over the next five years.

#### **WESTERN EUROPEAN REAL** (CONSTANT 2010 EURO) **CONSTRUCTION GROWTH BY** MAJOR SEGMENT

The differential between a moderately strong 'northern' Europe and a weaker 'southern' Europe market persists with this forecast, however, the flagship Northern economies of Germany and the UK are below par. To the south, Spain outperforms the other large economies in the near term, but softens by the medium term. Greece recovers slowly but steadily, while Portugal also continues to improve. In France and Italy, significant political disruptions will drain the business and consumer confidence necessary for investment. We expect just 0.5% real compound annual growth for Italy and just 1.3% for France. The UK construction market will languish with Brexit, although the British economy is one of the most open and resilient in the region and improvement to near 3.0% is expected after several years of languishment. On the negative side, the UK (-0.4%) and Italy (-0.7) will contract in 2020, before returning to growth over the forecast. The beleaguered Turkish market will see no growth in 2020 and

with just 0.3% CAGR, will be the laggard for the next five years.

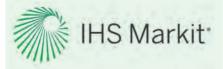
#### MEDIUM & LONG TERM OUTLOOK FOR REAL CONSTRUCTION SPENDING FOR MAJOR COUNTRIES

The region remains a slow growth market with each of the main building segments facing structural challenges. Poor demographics hinders the residential outlook, weak revenue growth that needs to support the social safety net of an ageing population limits funds for infrastructure, and a high cost labour force, compounded by excessive regulation in some countries, creates a lack of competitiveness that constrains investment.

While trade issues with the US seem to be mostly resolved (at this writing, their remains tension with French agricultural products), political unrest domestically and weakening export potential to slowing emerging markets suggest that the risk to Western European construction markets remains on the downside.

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Seeking a soft

The construction equipment market in Europe has been on a growth trajectory since 2014. Although the peak has now passed, only a moderate decline is expected and demand should stay at a healthy level, says

Chris Sleight,

Managing Director, Off-Highway Research



fter reaching a cyclical peak in 2018, the Western European construction equipment market is entering a period of moderate decline, according to specialist market research and forecasting company, Off-Highway Research. Sales peaked at 178,394 units in 2018, with a retail value of US\$14.7 billion. That was the highest demand has been for a decade, since the global financial crisis of the late 2000s.

Although at nearly 212,000 units (worth US\$19.8 billion), the peak of the mid 2000s was higher than the apex of the current cycle, that period around 2007 saw the market overheat and the recession which followed was very painful.

This time around demand has not spiralled as high, so the correction should not be as pronounced. Off-Highway Research's forecast is for a moderate decline of -3% in sales in 2019, followed by -5% in 2020. The low point in the cycle should come around 2021-2022, but demand is still expected to stay reasonably healthy, above 150,000 units.

Growth in Southern Europe will partially offset flat or declining sales in central and northern regions. However, any forecast comes with risks and uncertainties, and this was particularly the

case at the time of writing with respect to the impacts of Brexit.

Despite the unexpected Brexit referendum result in 2016, equipment demand in the UK initially held up well, and the country remains Europe's second largest market. However, the downturns being seen now in both the UK and Ireland are the steepest in Europe, and a good part of this is related to Brexit.

Construction equipment buyers in the UK and Ireland are now entering the fourth year of Brexit being imminent, but still without any clear direction on the outcome. This appears to have finally taken its toll on business confidence and has coincided with the natural cyclical downturn in the UK, exacerbating the slump in the market.

Meanwhile, both France and Germany are at similar points to the UK in the cycle, with peaks having been reached in 2018, following long periods of growth (albeit with a dip in 2015 for France). In Germany's case, the volume achieved last year was beyond all expectations, with a similar number of machines being sold as in the post-reunification boom of the early 1990s. After such a remarkable high, some decline is inevitable, but volumes will remain good. France meanwhile will remain around the peak levels achieved last year, with a decline not expected to start until 2020.

Europe's other major market is Italy, where, in common with Spain and Portugal, growth proved robust in 2019. These Southern markets are not the force they once were, accounting



# landing



for 15 per cent of regional equipment sales, compared to more than 25 per cent in the pre-crisis era. However, they are now well into extended periods of recovery. This means volumes are becoming more significant - a forecast 26,548 units in 2019, almost double the total for Italy, Portugal and Spain as recently as five years ago - and the positive impact on the European market as a whole is therefore becoming more noticeable.

In Northern Europe meanwhile, volumes have peaked at spectacular levels. The stand-out markets here have been Sweden and Norway, which have never been more buoyant. Indeed, Norway is was expected to set another record for equipment sales in 2019 on the back of significant infrastructure investment. Finland is also performing well, and should remain flat at a high level in 2019.

After such long periods of growth, with successive historic highs in equipment sales in the Nordic region, a downturn is of course inevitable. However, Off-Highway Research expects only moderate declines over the next 12 months, with volumes remaining at extremely good levels.

The situations in Belgium, Denmark and the Netherlands are somewhat different, with construction activity less buoyant and the forecast declines expected to be steeper, but not drastically so. All three of these markets are seeing rental becoming an increasingly important channel for equipment sales, and part of the reason for the more pronounced declines is that this type of buyer is believed to be more likely to suspend capital investment in times of falling demand.

Finally, Austria and Switzerland remain two of Europe's most stable markets, with very little cycle being discernible. Although Austria is seeing a modest decline this year, volumes remain strong. By the same token, Switzerland's gentle upturn reflects a steady and stable market.

#### **EQUIPMENT PREFERENCES**

Over recent years, the type of equipment used in Europe has changed, partly because of the



growing influence of rental companies.

Mini excavators (machines under 6 tonnes operating weight) are now hugely popular, with more than 68,000 sold last year - almost 40% of sales in unit terms. Hydraulic excavators above 6 tonnes – either crawler or wheeled are also high-volume products - with just over 41,000 machines sold in 2018, although the preference for crawler and wheeled machines varies significantly from country to country. The other high-volume products in Europe are wheeled loaders, with 26,827 machines sold last year, and telescopic handlers, demand for which reached 29,716 units in 2018.

Together, these equipment types accounted for some 93% of European machinery demand in unit terms last year. The remaining machine types are either inherently relatively low volume in Europe (pavers, dump trucks, graders and dozers) or machines which have fallen out of favour over recent years (backhoe loaders, crawler loaders and skidsteer loaders).

All in all, the European construction equipment market is in good health, and is forecast to remain reasonable for the foreseeable future. However, this comes with the caveat that we live in uncertain times and that there are many events which could derail the current stability. Brexit and the threat to global economic growth posed by rising tariffs and trade tensions were the obvious concerns at the time of writing, but there are other risks and unforeseeable factors.

#### ABOUT **OFF-HIGHWAY RESEARCH**

Off-Highway Research is a management consultancy specialising in the research and analysis of international construction, and agricultural equipment markets, and is the largest of its kind in the world. The consultancy was formed in 1981 as part of The Economist Intelligence Unit (EIU) and is now privately owned.

Off-Highway Research offers a unique level of international research expertise to the construction, earthmoving, mining, industrial and agricultural equipment industries. This specialist capability, offered by offices in the UK, China, India, the USA and Japan is available through a combination of Subscription Services and Private Client Research. The company is staffed by industry specialists with a wide range of industry, language and consultancy skills, and is supported by a unique database of information.

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# Decoding digital transformation in construction

Few engineering and construction companies have captured the full benefit of digital. Five practices can help E&C companies move beyond isolated pilots and unlock digital's value across their enterprises.

Il too often we see E&C organisations frustrated that their digital transformations are failing to deliver all that was hoped for. A few digital solutions may succeed in the pilot phase, but many struggle to achieve scale, and employees — on site and in the office — abandon them and return to their old ways of working.

As projects hit delays, budgets spiral upwards, and productivity stays the same, it's little surprise that the engineering and construction sector is one of the world's least digitalised.

#### **MAKING A DIGITAL DIFFERENCE**

Some challenges around digitisation are peculiar to the construction industry, making it hard to apply digital solutions across multiple projects. The large number of contractors and subcontractors involved results in fragmented projects that are also nearly always one-of-a-kind endeavours, with unique requirements requiring bespoke design and delivery approaches that are seldom repeated. Transience also plays a role, with each new project involving a new set of organisations working together. Finally, many large E&C companies tend to be decentralised and highly federated, with business units and divisions following their own processes rather than standardised ones, not least because many have grown by acquiring smaller firms.

Yet we are also seeing an increasing number of E&C companies successfully transforming

projects or divisions digitally. A systematic assessment of construction companies that have implemented digital technologies and ways of working found that, despite differing conditions, their transformations had five practices in common—from which other E&C companies embarking on similar transformations may learn:

### FOCUS ON FIXING PAIN POINTS, NOT INSTALLING IT SOLUTIONS

Too many companies focus on pursuing improvements to systems and software as ends in themselves. We often see E&C companies taking a tech-first approach as they deploy cutting-edge technology tools before they have figured out whether and how those tools can improve operations. This can lead to digital 'organ rejection', whereby a solution fails to deliver visible benefits, and the workforce, noticing this, does not adopt it.

E&C companies can increase the likelihood that digital technologies will make a positive difference by first identifying operational changes that will improve performance, then defining digital use cases that will enable those operational changes. This process-centred approach helps focus each use case on a real business need while suppressing the impulse to chase technology trends. Use cases defined in this way deliver greater benefits while building the understanding and conviction of the workforce, from the CEO to managers and frontline workers in various functional groups and decentralised business units. They are also easier to replicate on multiple projects and to introduce to new workers.

Concentrating on business processes must not stop after the first wave of use cases. The creation of use cases is an ongoing effort, and new opportunities for improvement often emerge once first-wave use cases are in place. For example, one contractor developed an app to allow supervisors to sign completion certificates digitally. After the app was developed, the team defined a new use case to push safety briefings and alerts through the app so supervisors could disseminate them to teams.

A good process-centred use case should specify three things: a process change, the required enablers (data and technology tools, capabilities, changes in mandates and responsibilities, legal and contractual requirements, and others), and the expected benefit. For example, a use case defined as "reduce losses from unrecoverable rework on steel-concrete connections by 10% by visualising fabrication details with 3-D models" is easier to comprehend and act on than a use case defined as "provide access to 3-D models from all devices."











This article was co-authored by (left to right) Jan Koeleman, Maria João Ribeirinho, David Rockhill, Erik Sjödin, and Gernot Strube. An extended version of this article - along with others on the utilisation of technology in business - can be found on McKinsey.com

#### **IMPLEMENT** DIGITAL USE CASES THAT PROMOTE **COLLABORATION**

We know many E&C companies that cherrysheer complexity of working across multiple organisations in the fragmented value chain. out on a valuable opportunity: stemming the large efficiency losses that can occur because information isn't transmitted effectively during handoffs between trades

E&C companies should therefore devote multiple disciplines and groups, and design among them. For example, real-time progress reporting from the construction raise invoices promptly and accurately. Of cases can unlock significant value despite

One contractor's experience showed why it workers hadn't sent feedback to a supplier on all defects in the elements that the feedback, it was anecdotal, unstructured, and difficult to act on. Defects persisted,

The company saw an opportunity to correct the problem by improving the mechanism team and the supplier. The site team used a mobile app to tag defects against specific a common data environment (CDE), a single repository for information about the project. the CDE, then ran root-cause analyses with its factory team to diagnose and reduce defects. The resulting improvement, a 12% previously disconnected organisations.



#### **RESKILL & RESTRUCTURE ENGINEERING TEAMS**

Digital technologies have introduced profound changes to the practice of engineering design. For example, generative design tools, which automatically propose a range of design options in accordance with user-defined specifications, can radically reduce the time it takes to develop designs.

Applying these new techniques requires designers not only to learn technical skills, but also to design in new ways. E&C companies with internal design functions should equip themselves with new technical skills – for example, by hiring developers to build standard element libraries and automate design processes. They should also start to adopt digital ways of working, shifting from a traditional, linear design process to a more agile approach that consists of faster iteration in short test-and-refine loops. Such a change requires that designers adopt a new mind-set, using their experience to validate model results (rather than re-creating them) and to look for opportunities for standardisation and repetition. This way of working will create capacity for designers to focus on the most intellectually challenging problems, for which engineering brainpower is irreplaceable.



Some challlenges around digitisation are peculiar to the construction industry, making it hard to apply digital solutions across multiple projects







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Generative design tools, which automatically propose a range of design options in accordance with user-defined specifications, can radically reduce the time it takes to develop designs



#### **ADJUST PROJECT BASELINES** TO CAPTURE VALUE

Many of the E&C executives we speak to say their companies have seen some productivity gains from digitisation but little impact on the bottom line because the savings from added productivity don't make up for the cost of implementing new software and systems. This can occur when productivityboosting use cases create float during the execution phase and managers neglect to remove this float from the project baseline. To realise the full bottom-line benefit from digital use cases, managers must adjust baselines to eliminate unproductive time and generate

Managers can capture the benefits of increased productivity in several ways: compressing on-site schedules, reducing resources in certain teams, and even restricting the booking of overtime. This approach requires close collaboration among the organisations working on the project as well as clear communication about the project plan, especially with new workers who are accustomed to a slower pace of execution. Companies can also change contracts and incentives to share benefits and risks appropriately across the value chain.

Teams need not take a leap of faith when adjusting baselines. They should closely monitor the effects of each use case during its testing on a pilot project to understand how much they can adjust baselines without jeopardising subsequent projects. This might involve observing site works and tracking downtime before and after implementing a use case. Knowing how much downtime is created will help inform future adjustments to resource levels and schedules. Adjustments could also involve stopping work one or two hours early each day to constrain the schedule deliberately and show that higher productivity is possible. Whatever the findings are from these efforts, project managers should document them so future projects can replicate effective methods of adjusting baselines.

#### CONNECT PROJECTS TO UNLOCK IMPACT **ACROSS THE ENTERPRISE**

At a typical decentralised E&C company, it is easy for business-unit leaders to focus on optimising projects – while overlooking the enterprise-wide use cases that could unlock a whole new wave of value as the company standardises its digital tools and platforms across its various business units and shares more data from projects. Common enterprise-wide use cases for E&C companies include:

- Consolidating cost and schedule data from multiple projects and business units to increase accuracy of bids for future tenders and thereby increase margin
- Gaining an enterprise-wide view of resources to optimise resource loading and respond quickly when project demands change
- ☐ Creating central repositories of designs at the element, package, and project levels so those designs can be repurposed on future projects

One E&C company embraced the potential of enterprise-wide use cases by standardising the specifications for its insulation panels. Previously, the company had sourced similar products from different suppliers. Why? The products were not coded or classified in a standard way, so designers could not determine that the elements were similar enough that they could use just a few products in place of the many different ones ordered previously. By digitising and standardising element data, the company gained an enterprise-wide view of element volumes, which enabled it to standardise specifications and aggregate purchase orders to obtain savings.

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## Europe's road ahead

Construction will be both a bellwether and one of the main drivers of growth in Europe in 2020. Construction Europe eyes the political landscape and highlights some of Europe's most significant projects

he political landscape of Europe is as diverse and convulsive as its natural and manmade topography. In a continent on which over 200 languages are regularly spoken, of course, it is hardly surprising that there are cultural differences, and these differences significantly impact on construction.

In an ever more digitalised and interconnected industry, it might seem strange that construction practices, for example, could diverge so widely, yet contractors in one country will opt to buy equipment, while in another they choose to rent.

Backhoe loaders, for example, are everpresent on construction sites in some EU member states, while they are virtually nonexistent in others.

The bottom line is that, from both a sociopolitical and geo-political standpoint, the continent of Europe is difficult to predict.

With the Conservative Party's landslide victory in the UK General Election, it appears, as this article is written, that Britain's withdrawal from the European Union (a process known for the past three years as Brexit) will go ahead on January 31, 2020.

Sterling and share prices surged on the news of the result, possibly in relief that the days of uncertainty could be behind both the UK and the members of the European Union with which it trades.



#### TARIFFS AND TRADING

Of course, Brexit – and the way the Union trades with the UK in the future - is just one of a number of issues to be resolved by the EU: another is that of its somewhat strained relationship with the US, largely resulting from a wrangle over airline subsidies.

Towards the end of 2019, the US government approved tariffs on EU goods to the tune of almost €7 billion – goods which include some construction equipment.

The decision was made in the wake of a

World Trade Organization (WTO) ruling on Airbus, in which the organisation concluded that unlawful subsidies had been given by the EU to the aerospace company.

Following the announcement, the Committee for European Construction Equipment (CECE), joined with the US-based Association of Equipment Manufacturers (AEM) to speak out against the tariffs.

In a joint statement, CECE and AEM pointed out that the EU is likely to follow suit with tariffs of its own, if the WTO rules – as seems likely – that the US has been guilty of giving similarly unlawful subsidies to the Boeing aerospace company.

The statement pointed out that, "the use of tariffs will inevitably lead to counter tariffs, lost markets for producers, higher consumer prices, shaky investor confidence and the potential to undermine long established transatlantic supply chains our workers and industry depend on. The United States and the European Union need to focus on removing barriers to trade while working together to counter unfair trade practices by third countries. Strengthening the rule of law and reforming the WTO to effectively respond to the challenges of global commerce in the 21st century is in the shared interests of the United States and the European Union."



#### PROJECTS AND POLITICS

Member of the European Parliament, Jens Gieseke, said that a European strategy was needed if it was going to compete with countries such as China.

Great significance is placed on a small number of large projects, which will create jobs in the short and medium term, while aiding economic growth in the longer term.

Following a period of growth in the EU, investment in infrastructure has been declining since 2009, following the financial crash of 2008. While there has been a gradual easing of this negative trend since 2015, investment rates remain below pre-crisis levels.

Projects that could link transport and infrastructure with new 5G technology moved a step closer after the European commission (EC) set out rules that will accelerate deployment of Cooperative Intelligent Transport Systems (C-ITS) on European roads.

The C-ITS project is intended to be used in the development of automated transportation. The idea is that vehicles will be able to communicate with each other and road infrastructure, such as traffic lights and electronic signage, to create a safer environment on the roads. However, the plans have been criticised for supporting existing wi-fi networks over new cellular technology.

#### **INFRASTRUCTURE DRIVERS**

Further European infrastructure construction is planned in Stockholm, Sweden. A total investment volume of €111 billion (US\$125.44 billion) up to the year 2040 has been reported by investment agency, Invest Stockholm. This bulk of the money would be spent on housing and rail projects. This is a significant increase from the figure projected in 2017, when investments were worth €95 billion (US\$107.36 billion).

In 2020 Stockholm will have a population of one million people. By 2030, the city is expected to see a 40% increase of inhabitants to 1.4 million.

The sheer volume of planned construction in the region exceeds what can be accomplished by the current regional workforce. In order to achieve the targets by 2040 there will need to be an additional 46,000 construction workers employed in the region.

In other positive news, construction of a replacement bridge after the disastrous Genoa bridge collapse in Italy is said to be ready to



A view of the proposed Euston station in London, part of the HS2 project





A TBM operates on TELT, the tunnel project set to connect Turin and Lyon

commence by 31 March, 2019. More than 40 people were killed in August 2018 when an 80m section of the Morandi Bridge collapsed in stormy weather.

The original bridge was just over 1km in length. The new bridge, which will take over 12 months to be completed, will be 1.15km.

The bridge, designed by architect Renzo Piano, will be built by contractors Salini Impregilo and Fincantieri.

Salini Impregilo's CEO, Pietro Salini, said, "Twelve months to help relaunch Genoa. That is the dream that we are hoping to give the Genoese before Christmas, to relaunch the city as quickly as possible and send a strong message to the entire country. Public works can kickstart the economy and start to create jobs again."

Another significant project is the Grand Paris Express rail project in France. One of the largest infrastructure projects under construction in Europe, it includes plans to add four fullyautomated metro lines, 200km of new railway lines and 68 new interconnected stations to Paris' existing transport network.

The Société du Grand Paris is investing €3.5 billion in 2019 - an increase of approximately 40% compared to 2018. The Grand Paris project currently represents 65 civil engineering projects and 35 preparatory works on the entire network. Currently there are three tunnel boring machines (TBM) in operation on the south track of line 15, with 21 TBM expected to be working simultaneously on the project by early 2020.

In 2020, construction is expected to begin on the Fehmarnbelt tunnel, an 18km long undersea tunnel, designed to link Germany and Denmark. This will be the world's longest immersed road and rail tunnel, and will shorten the journey between the German and Danish coasts to just 10 minutes by car and seven minutes by train, compared with the current travel time of one hour by ferry or a 160km detour via the Danish region of Jutland by car.

The link will be made of hollow concrete elements, cast on land and assembled section by section to form the tunnel.

In the UK, HS2 high-speed rail line has recently

seen contracts awarded to contractors Mace, Dragados, Balfour Beatty, Vinci and Systria. This project is expected to support 15,000 jobs by 2020, and as many as 30,000 when it reaches its peak construction period. One of the UK government's plans to keep HS2 on track is the addition of 2.000 apprentices that will be involved in design and building aspects.

Although UK Prime Minister Boris Johnson recently called for a review of the hugely overbudget project, his post-election speech has led many to infer that it will ultimately get the green light to move forward.

#### **MOVING FORWARD**

In Finland, a project to build the world's longest underwater rail tunnel is moving forward, thanks to a €15 billion investment from a Chinese firm.

The 103km rail link will run beneath the Gulf of Finland, connecting the capital Helsinki with the Estonian capital of Tallinn, via The Island, a proposed manmade island, 15km from the Finnish coast.

When completed, the rail link is expected to cut travel times to around 20 minutes. benefiting tens of thousands of daily commuters who currently make a two-hour crossing by ferry.

A project that highlights the challenges and potential within European construction is TELT, or the Tunnel Euralpin Lyon Turin.

At the heart of the project is a 57.5km twinbored tunnel that will be the longest railway tunnel ever built. It is also expected to improve the environment of the Alps by transferring one million lorries from the road to the rail.

Furthermore, as well as improving trade between Italy and France, the project promises the additional benefit of boosting freight connections to other European countries.

A total of 25km of land has been prepared for the rail line, including 8km of tunnel.

Unfortunately, after taking some 20 years to break ground on the €25 billion project, its future even now is somewhat uncertain, due to political divisions within Italy.

Stéphane Guggino, general representative of the project's committee, said, "The aim remains to start using the tunnel by 2030. In order to achieve that, however, there need to be no delays and we need to stop having all this political unrest."

In a perfect illustration of the state of the Union itself, he said, "This is not just about connecting Turin and Lyon, but actually creating the favourable conditions for the development of Europe. Europe's best chance at growth is shortening the distances between its biggest cities through infrastructure, and at the moment, linking Italy to northern regions is its best bet."





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## European Stat

Europe in facts and figures, and how these relate to the construction industry

EU PLUS NORWAY AT A GLANCE (AS A	T 2018)
Population	526.2 million
Area	5.34 million km <sup>2</sup>
GDP 2018	€17.82 trillion
Construction as percentage of GDP (average)	9%
Number of construction companies (EU)	3.3 million
Number of construction jobs (EU)	14.8 million
	·

		EU PLUS NOI	RWAY IN FIGUR	RES		
COUNTRY	POPULATION (MILLION)	AREA <b>area</b> (km²)	CONSTUCTION OUTPUT AS % VARIANT ON PREVIOUS YEAR (2019 ESTIMATE)	CONSTRUCTION GROSS VALUE (€ BILLION)	CONSTRUCTION AS % OF GDP 2018	NO. OF JOBS IN CONSTRUCTION (1,000s) 2018
AUSTRIA	8.82	82,409	+1.5	21	10.9	277
BELGIUM	11.40	30,280	+1.8	20.5	10.2	281
BULGARIA	7.05	108,560	+16.1	1.8	10.9	184
CZECH REPUBLIC	10.67	77,240	+3.8	9.2	5.2	370
DENMARK	5.81	42,430	+1.6	12.4	8.4	190
ESTONIA	1.32	42,390	N/A	1.5	9.0	50
FINLAND	5.51	303,890	+0.4	13.8	9.3	207
FRANCE	66.89	547,557	+0.3	112.1	11.9	1,765
GERMANY	82.79	348,560	+2.2	144.3	7.5	2,529
GREECE	10.74	128,900	N/A	3.7	9.9	152
IRELAND	4.83	68,890	+6.0	7.2	4.7	143
ITALY	60.48	294,140	+2.0	72.2	5.2	1,395
LATVIA	1.93	62,200	+15.0	1.4	6.0	68
LITHUANIA	2.79	62,674	N/A	2.5	7.2	100
NETHERLANDS	17.18	33,720	+5.1	29.3	10.9	461
POLAND	37.98	306,230	+5.0	30.4	6.1	1,188
PORTUGAL	10.29	91,590	+4.0	6.8	9.8	313
ROMANIA	19.53	230,170	+8.7	11.0	6.5	455
SLOVENIA	2.10	20,140	-4.8	2.1	8.7	58
SPAIN	46.66	498,800	+4.2	64.8	15.9	1,222
SWEDEN	10.12	410,340	-3.2	26.7	9.8	350
UNITED KINGDOM EUROPEAN UNION	66.44	241,930	N/A	127.6	5.8	2,333
EUROPEAN UNION	512.40	4,476,000	+2.2	722.3	7.7	14,100

46.40

365,268

27.6

+3.6

220

9.7

## istical Review

#### CONSTRUCTION OUTPUT PER COUNTRY AS A PERCENTAGE OF THE TOTAL (2018 ESTIMATED)



## Europe's top

Divisions

Hochtief

23.882

5,990

4,864

4,008

2,338

2,243

2,213

54

Redrow

Swietelsky

Laing O'Rourke

#### The top five contractors in Europe hold firm as a strong European economy prevails, but UK and Spanish companies slip a few places

s is usual, the league table has witnessed a few changes in company rankings this year, but, unlike last year, when the top ten companies remained in the same position, there has also been some movement in the companies ranked from seven through to ten.

The UK's highest company in the table, TechnipFMC, has slipped to eight with Austrian-based Strabag moving into the former's position, up one from last year.

A notable change has been the drop in revenue for Spanish contractor Ferrovial. The company posted a revenue of €5.74 billion for 2018, less than half of the previous year's €12.21 billion published in last year's table.

This dramatic fall in revenue is the result of excluding the firm's service division revenue, which is classified for sale, knocking the company out of the top ten – nine

places lower than it was in the 2018 table, in fact, to 18th place.

Vinci has remained number one since the CE-100 league table was first published 18 years ago, and yet again the French contractor maintains its position at the top.

In its full-year 2018 financial results, Vinci reported growth in revenue from both its French and international activities.

Total revenue grew from €40.88 billion in 2017 to €43.52 billion in 2018. Within that, revenue from Vinci's French activities increased from €23.68billion in 2017 to €24.768 billion in 2018, and revenue from its international activities rose from €16.57 billion in 2017 to €18.75 billion in 2018 - up 13.2%

Looking specifically at Vinci's construction business, revenue increased from €13.96 billion in 2017 to €14.2 billion in 2018.

Within the top 20, two companies

#### REVENUE 2018 (€ M) COMPANY COUNTRY RANK CHANGE 43.519 Vinci France 36,658 Spain 35.555 **Bouygues' Construction** France

THE CE-100 LEAGUE TABLE

Germany

Spain

Italy

Switzerland

17

16

32

57

30

4

-24

5

2

-8

2

5	18,059	Skanska	Sweden	5	-
6	16,890	Eiffage	France	6	-
7	15,221	Strabag	Austria	8	1
8	12,559	TechnipFMC	UK	7	-1
9	8,526	Saipem	Italy	10	1
10	8,075	Balfour Beatty	UK	11	1
11	7,509	Acciona	Spain	12	1
12	7,207	Bam Group	Netherlands	13	1
13	6,693	Spie	France	14	1
14	6,486	NCC Group	Sweden	18	4

**Barratt Developments** 4 5.936 17 5,924 **VolkerWessels** Netherlands 19 2 Ferrovial 9 -9 18 5.737 Spain 19 5,518 Peab Sweden 21 2 Petrofac -5 5.323 21 5.139 **Kier Group** IJK 23 2 **Taylor Wimpey** 2 4.971 IJK 24 Porr 4.959 Austria 25 2

4,551 Persimmon UK 26 1 26 4.458 **Ackermans &** Belgium 28 van Haaren 27 4,396 **Tecnicas Reunidas** 22 -5 Spain 28 4.368 Fayat Group\* France 31 3 -2 29 4,153 Bilfinger Germany 27

Salini Impregilo

Implenia

Nexity 4 31 3,940 France 35 Veidekke 32 3,806 Norway 39 7 Sacyr Vallehermoso 33 3.796 42 9 Spain 3.689 **Finland** 58 24 Belgium 8 3,641 Compagnie 43 D'Entreprises CFE SA

36 3,619 Morgan Sindall UK 34 -2 3.614 **Maire Tecnimont** 3,601 **Berkeley Group** IJK 37 -1 HK 3,601 **Bellway** 41 2 40 **Galliford Try** UK 36 -4 3.569 41 3.497 Interserve 29 12 42 -4

3,397 Ed Züblin Germany 43 2.907 **Obrascon Huarte Lain** Spain 40 -3 Astaldi\* 45 1 44 2,888 Italy 2,801 **Mota-Engil** Portugal 2,784 Mostotrest Russia 44

-2 47 **Keller Group** UK 47 2,709 48 2,679 UK 54 6 2,646 DEME Belgium 50 2,569 **Boskalis Westminster** Netherlands 2,551 Goldbeckbau 3 51 48 Germany 52 2,542 Besix Belgium 51 -1

IJK

Austria

Many other countries feature in the full list including; Japan, India, Australia, South Korea, Canada and Hong Kong.

For full details of the iC global top 200, visit www.khl.com.

#### Global standings



CE's sister magazine, International Construction (iC) has published a companion piece to the CE-100, a league table of the world's top 200 contractors. Europe's highest earning contractor, Vinci, sits once again at number five in the table. All four contractors above Vinci were Chinese, with the China State Construction & Engineering (CSCE) company sitting at the top position by some margin. CSCE's revenue was US\$178.9 billion (€161.2 billion) - a huge €61.2 billion higher than second placed China Railway Group.

Of the top ten contractors in the list, five were Chinese, four were from Europe and

one from the US. Regarding European contractors, alongside Vinci were Spain's ACS group at number 7, France's Bouygues' Construction Divisions at number 8 and Germany's Hochtief at number 9. The only US company in the top ten was privately owned Bechtel Corporation, posting a revenue for the year of US\$25.5 billion (€23 billion).

## contractors

	DE1/	ue.			40
	REVEN	_	COLINITON	20	
	(€ M)	COMPANY	COUNTRY	RANK C	
56 57	2,211	Enka Banatti	Turkey	49	-7
57 50	2,150	Bonatti	Italy	97	40
58	2,127	Tekfen Holding NGE	Turkey	69	11 2
59 60	2,028		France	61 74	14
60	2,009	AF Gruppen Isolux Corsan*	Norway		
61 62	2,000	LSR	Spain	53	-8
	1,975		Russia	80	18
63	1,916	Strukton Groep	Netherlands	59	-4
64	1,900	Max Boegl*	Germany	66	2
65	1,880	Van Oord	Netherlands	70	5
66	1,857	Ellaktor	Greece	62	-4
67	1,837	Bloor Holdings	UK	65	-2
68	1,827	Wates Group	UK	63	-5
69	1,782	Costain Group	UK	56	-13
70	1,708	TBI Holdings BV*	Netherlands	68	-2
71	1,707	Jan De Nul	Belgium	84	13
72	1,693	Budimex SA	Poland	75	3
73	1,656	JM	Sweden	64	-9
74	1,626	Per Aarsleff AS	Denmark	71	-3
75	1,611	Willmott Dixon	UK	72	-3
76	1,589	Bauer	Germany	67	-9
77	1,579	Heijmans	Netherlands	77	-
78	1,558	Kaufman & Broad	France	79	1
79	1,515	Techint Engineering	Italy	76	-3
		& Construction*			
80	1,484	Glavstroy*	Russia	78	-2
81	1,402	GEK Terna	Greece	81	-
82	1,401	Renaissance	Turkey	55	-27
		Construction*			
83	1,303	Abengoa	Spain	73	-10
84	1,210	Köster*	Germany	83	-1
85	1,200	Dura Vermeer*	Netherlands	82	-3
86	1,141	Bowmer & Kirkland	UK	85	-1
87	1,125	Comsa EMTE*	Spain	88	1
88	1,080	Trevi SpA	Italy	90	2
89	988	CMC Ravenna*	Italy	87	-2
90	959	SRV Group	Finland	86	-4
91	877	RZD Story*	Russia	93	2
92	873	Teixeira Duarte	Portugal	89	-3
93	850	Van Wijnen*	Netherlands	96	3
94	844	Condotte d'Acqua	Italy	94	-
95	822	Miller Homes	UK	95	-
96	818	Metrostav AS	Czech Republic	NEW	
97	758	Grupo San Jose	Spain	100	3
98	658	Pizzarotti	Italy	NEW	
99	658	Renew Holdings	UK	99	-
	600	Sisk Group*	Ireland	NEW	-1

<sup>\*</sup> Estimate

METHODOLOGY: The CE-100 is based on sales revenues in 2018 either full or financial years. It is compiled from a range of sources including audited annual accounts, companies' own statements of revenues and information from reputable third parties such as Dun & Bradstreet. In some cases CE has estimated company revenues.

moved four places up the list. Sweden's NCC group and UK company Barratt Developments moved up to 14th and 16th place, respectively.

Falling five places down the table is another UK firm, Petrofac. The company slid from 15th in last year's rankings down to 20th, seeing revenue drop by 11.9%, from €6.05 billion in 2017 to €5.3 billion in 2018.

Similarly sliding down the table is Salini Impregilo of Italy. The company is now positioned at number 24, down eight places. Revenue for the firm fell 18.1% over the year, but the company has recently been invested in its vision for Project Italy.

The concept, will see the firm

combine with struggling Italian company Astaldi (among others) creating a sizeable business, able to bid for the biggest contracts.

Astaldi has been included in this table with the same revenue it reported to have in 2017 - the firm has delayed the publication of its 2018 figures and it applied to the court of Rome for protection against its creditors a year ago.

One successful merger has seen Finnish contractor YIT move up the table by 24 places. The company absorbed fellow Finnish company Lemminkäinen in early 2018. In 2016, Lemminkäinen reported a revenue of just under €1.7 billion. With a revenue of €3.69 billion in 2018, YIT now sits firmly in the 34th position in the table.

#### Financial analysis

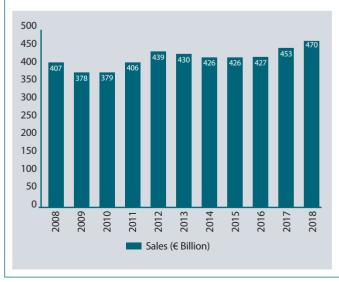
Total revenues for this year's CE-100, which is based on 2018 figures, came to €469.6 billion. This represented a rise of 3.5% on the CE-100 2017 figure of €453 billion, which itself was up 6.09% on the total revenue figure for 2016.

The industry appears to have recovered well from the huge dip seen in 2009 when the total revenue in the CE-100 league table was €378 billion.

Looking at Europe as a whole in 2018 - figures released by FIEC (European Construction Industry Federation) showed total construction output had moved past €1.4 trillion – some €70 billion more than 2017), approximately a third ahead of the US and more than three times that of Japan.

Germany was the country with the largest construction output in 2018, with the country's projects worth €351 billion. The UK's construction output totalled some €194 billion, putting it second, with France a close third, with €182 billion in projects.

The remaining two in the top five included Italy, €128 billion, and Spain outputting a total of €124 billion in the industry.





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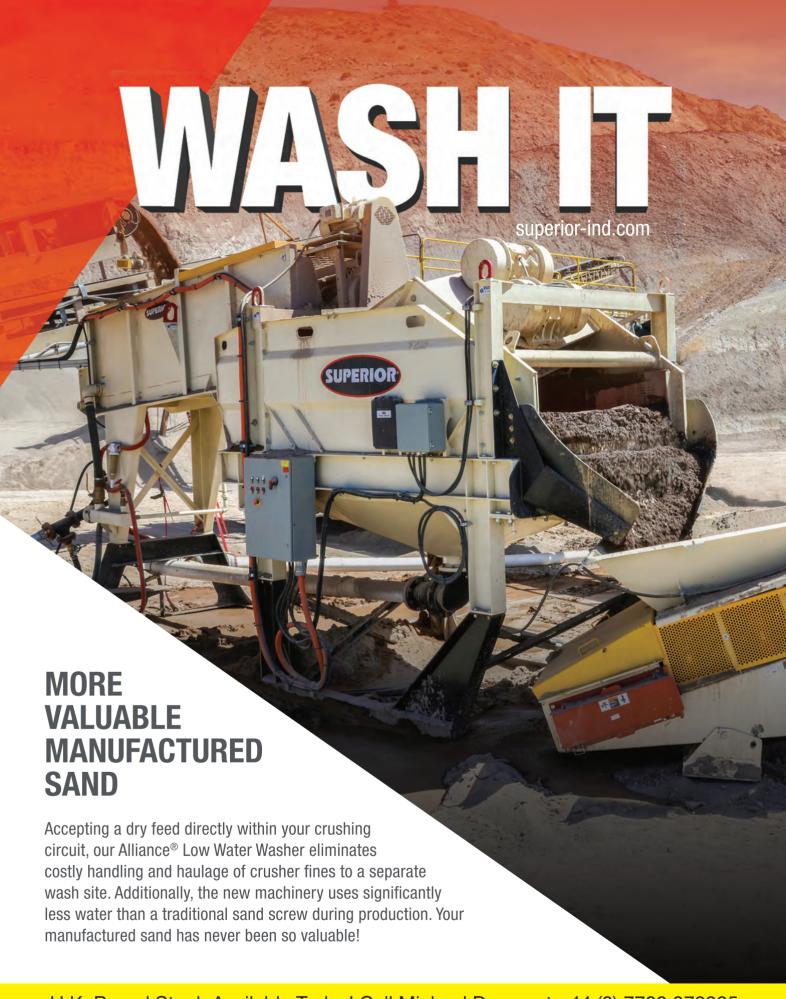
### **Contractors across Europe**

Construction Europe has compiled a list of Europe's leading construction companies. This list has been designed to give a clear overview of the European construction sector, in alphabetical order. A league table of the top contractors in Europe is on pages 32 and 33.

nformation in this directory has been compiled from a number of sources, including Construction Europe's own survey, data from financial analysts and annual reports. It should be noted however that while financial data is presented in €, exchange rates do vary, so these figures are for general guidance only.

Whenever possible, turnover (sales) and construction figures apply to construction output only, but other group activities may be included. Construction Europe has made every effort to ensure that information presented here is correct, but cannot be held responsible for any inaccuracies.

COMPANY COUNTRY		SENIOR EXECUTIVE		IN € M	IOVER		NUMBER OF	MAIN AREAS OF OPERATION	
WEBSITE	POSTAL ADDRESS	& CONTACT DETAILS	2015	2016	2017	2018	EMPLOYEES	(SEE P49 FOR COUNTRY KEY)	
ABENGOA Spain	Campus Palmas Altas, Calle Energía Solar, 1, Seville, Andalusia 41014	Gonzalo Urquijo Fernández de Araoz, Chairman T: +34 (0)95 4937 000	5,755	1,510	1,479	1,303	12,475	ES DE Sam MEX CN	
www.abengoa.es		F: +34 (0)95 4933371							
ACCIONA Spain www.acciona.es	Avda. Europa 18, Alcobendas, Madrid 28108	Jose Entrecanales Chairman & CEO T: +34 (0)91 6632850 F: +34 (0)91 6632851	6,544	5,977	7,253	7,509	37,403	ES US DE SAm EU ME	
ACKERMANS & VAN HAAREN Belgium www.avh.be	Begijnenvest 113, B- 2000 Antwerpen	Jan Suykens CEO T: +32 3 231 87 70 F: +32 3 225 25 33	4,011	4,901	3,950	4,458	12,352	BE DE IN US	
ACS Spain www.grupoacs.com	Avenida Pio XII 102, 28036 Madrid	Florentino Perez Rodriguez Executive Chairman & co-CEO T: +34 91 3439200 F: +34 91 3439456	34,925	31,975	34,898	36,658	195,461	AU US NZ BE ES	
AF GRUPPEN Norway www.afgruppen.no	Innspurten 15, Oslo, PS 0663	Morten Grongstad President & CEO T: +47 (0)228 91100 F: +47 (0)228 91101	1,378	1,267	1,468	2,009	4,220	NO SW CN	
ASTALDI Italy www.astaldi.it	Via Giulio Vincenzo Bona, 65 Roma, 00156	Paolo Astaldi Chairman T: +39 06 417661 F: +39 06 41766720	2,730	2,852	2,888	2,888	10,491	IT DE GR LU R-Fed UK NAm	
BALFOUR BEATTY UK www.balfourbeatty.com	130 Wilton Road, London, SW1V 1LQ	Leo Quinn CEO & Director T: +44 (0)20 7216 6800 F: +44 (0)20 72166950	9,278	8,225	8,395	8,075	19,474	UK US HK	
BALLAST NEDAM Netherlands www.ballast-nedam.nl	Ringwade 71, 3439 LM Nieuwegein, Utrecht	Cenk Düzyol Chairman T: +31 302854250 F:	850	789	740	740	1,713	ND AF UK	
BAM GROUP Netherlands www.bam.nl	Runnenburg 9, PO Box 3981 AZ Bunnik	Rob P van Wingerden CEO T: +31 (0)30 659 8988 F: +31 (0)30 659 8296	7,423	6,976	6,603	7,207	20,194	UK NL US BE	
BARRATT DEVELOPMENTS UK www.barratthomes.co.uk	Kent House, 14-47 Market Place, London, W1W 8AJ	David Fraser Thomas Chief Executive T: +44 (0)20 72994898 F: +44 (0)2072994851	5,173	5,085	5,662	5,936	6,504	UK DE IE CN EU	
BAUER Germany www.bauer.de	BAUER-Strasse 1, 86529 Schrobenhausen	Prof. Thomas Bauer CEO T: +49 (0)8252 970 F: +49 (0)8252 972900	1,379	1,397	1,667	1,589	10,913	DE US EU	
BELLWAY UK www.bellway.co.uk	Seaton Burn House, Dudley Lane, Seaton Burn, Newcastle upon Tyne NE13 6BE	Jason Honeyman CEO & Executive Director T: +44 (0)191 217 0717 F: +44 (0)191 236 6230	2,428	2,806	3,115	3,601	2,998	UK EU AU US	
BERKELEY GROUP UK www.berkeleygroup.com	Berkeley House, 19 Portsmouth Road, Cobham, Surrey	Anthony Pidgley Managing Director T: +44 (0)1932 868555 F: +44 (0)1932 868667	2,816	2,828	3,292	3,601	2,711	UK US DE CN AU	



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CRUSHING SCREENING WASHING CONVEYING SUPERIOR COMPONENTS PLANTS TURNKEY AFTERMARKET

COMPANY COUNTRY		SENIOR EXECUTIVE		TURNOVER IN € MILLION			NUMBER OF	MAIN AREAS OF OPERATION
WEBSITE	POSTAL ADDRESS	& CONTACT DETAILS	2015	2016	2017	2018	EMPLOYEES	(SEE P49 FOR COUNTRY KEY)
BESIX Belgium www.besix.com	Gemeenschappenlaan 100 / Ave des Communautés 100, 1200 Brussels	Johan Beerlandt Chairman & CEO T: +32 (0)2 402 62 11 F: +32 (0)2 402 62 00	2,160	2,359	2,337	2,542	17,960	UAE BE FR NL DK AF LV
<b>BILFINGER</b> Germany www.bilfingerberger.de	Carl-Reiss-Platz 1-5, 68165 Mannheim	Thomas Blades Chairman-Executive Board T: +49 (0)621 4590 F: +49 (0)621 4592366	6,481	4,248	4,044	4,153	35,905	DE UK US EU ME UAE
BLOOR HOLDINGS UK www.bloorhomes.com	Ashby Road, Measham , Swadlincote, Derbyshire, DE12 7JP	John Bloor Chairman & Director T: +44 (0)1530 270100 F: +44 (0)1530 271440	1,337	1,400	1,756	1,837	2,281	IN UK US CN JP NZ
BONATTI Italy www.bonattinternational.com	Via Nobel 2/A, 43100 Parma	Paolo Ghirelli President T: +39 0521 6091 F: +39 0521 607700	933	799	744	2,150	6,000	BU R-Fed
BOSKALIS WESTMINSTER Netherlands www.boskalis.com	Rosmolenweg 20, PO Box 43, 3350 AA Papendrecht	Dr A. M Berdowski Chairman-Management Board T: +31 (0)78 6969000 F: +31 (0)78 6969555	3,240	2,596	2,337	2,569	7,078	NL UK ML AP AF
BOUYGUES CONSTRUCTION France www.bouygues.com	32, Avenue Hoche, Paris, Ile-de-France, 75008	Martin Bouygues Chairman & CEO T: +33 (0)144201000 F: +33 (0)1 30604861	28,961	25,001	32,904	35,555	129,275	FR EU UK US CN HK AU AP DE
BOWMER & KIRKLAND UK www.bandk.co.uk	High Edge Court, Heage, Belper, Derbyshire DE56 2BW	John Kirkland Director T: +44 (0)1773 853131 F: +44 (0)1773 857561	1,008	1,134	1,132	1,141	1,495	UK UAE US
BUDIMEX SA Poland www.budimex.com.pl	ul. Stawki 40, Warsaw, 01-040	Dariusz Jacek Blocher Chair-Mgmnt Bd/Gen. Man. T: +48 (0)22 6236000 F: +48 (0)22 6236001	1,226	1,277	1,459	1,693	6,906	PLTU
CMC RAVENNA*  Italy  http://cmcgruppo.com	48122, Via Trieste, 76, Emilia-Romagna, Ravenna	Paolo Porcelli President T: +39 0544 428111 F: +39 0544 428554		1,200	1,085	988	7,381	IT AF
COMPAGNIE D'ENTREPRISES Belgium www.cfe.be	Avenue Hermann Debroux 40-42, 1160 Brussels	Luc Jacques Bertrand Chairman T: +32(0)2 6 61 12 11 F: +32(0)2 6 61 17 95	3,239	2,797	3,066	3,641	8,598	BE AF FR MEX
COMSA EMTE* Spain www.comsaemte.com	Edificio Numancia 1, C./ Viriato, 47, 08014 Barcelona	Jorge Miarnau Montserrat Chairman T: +34 (0) 933 662 100 F: +34 934051340	1,575	508	1,080	1,125	7,785	ES
CONDOTTE D'ACQUA Italy www.condottespa.it	Via Salaria 1039, 00138 Roma	Giuseppe Di Giovine Managing Director T: +39 06 883341 F:	1,352	1,315	831	844	520	IT ME Fin
COSTAIN GROUP UK www.costain.com	Costain House, Vanwall Business Park, Maidenhead, Berkshire SL6 4UB	Alexander John Vaughan CEO & Executive Director T: +44 1628 842444 F: +44 1628 674474	1,739	1,917	2,051	1,782	4,008	UK ES AF NZ US
<b>DEME</b> Belgium www.deme.be	Haven 1025, Scheldedijk 30, 2070 Zwijndrecht	Alain Bernard Key Executive T: +32 (0)3 250 52 11 F: +32 (0)3 250 56 50	2,286	1,978	2,356	2,646	4,000	BE US
<b>DEMOCO NV</b> Belgium www.democo.be	Herkenrodesingel 4 Internal Postal Box B, Hasselt, Limburg 3500	Rudy Houben Chairman T: +32 (0)11 22 45 26 F: +32 (0)11 22 56 31				196.85	314	BE NL LUX PO
<b>DESTIA</b> Finland www.destia.fi	Opastinsilta 12 B, PO BOX 73, 00521 Helsinki	Arto Pohjonen President, CEO & director T: +358 (0)20 444 11 F:	463	493	479	261	1,429	FI
DOPRASTAV Slovakia www.doprastav.sk	Drienova 27, 826 56 Bratislava	Dusan Mráz Chairman T: +421 248271500 F: +421 (0)2 43 33 70 63				308	1,169	SK CZ DE AF ME
DURA VERMEER* Netherlands	Rotterdam Airportplein 21, Rotterdam, Zuid-Holland, 3045 AP	J. Dura Chairman T: +31 102808700 F:	1,004	940	1,183	1,200	2,515	GR NL
ED ZÜBLIN Germany www.zueblin.de	Albstadt Weg 3, 70567 Stuttgart 80	Thomas Birtel Chairman T: +49 (0)711 78830 F: +49 (0)711 7883390	3,415	3,397	3,260	3,397	15,143	DE AF AT Fin SW

COUNTRY WEBSITE	POSTAL ADDRESS	TURNOVER SENIOR EXECUTIVE IN € MILLION & CONTACT DETAILS 2015 2016 2017				2018	NUMBER OF EMPLOYEES	MAIN AREAS OF OPERATION S (SEE P49 FOR COUNTRY KEY)	
EIFFAGE France www.eiffage.fr	163, quai du Dr Dervaux, Asnieres-sur-Seine Cedex, 92600	Benoit de Ruffray Chairman & CEO T: +33 (0)1 41 32 80 00 F: +33 (0)1 41 32 81 10	14,060	14,307	15,263	16,890	70,400	SE NO FI DK UK PL CZ US Nam	
ELLAKTOR Greece	25 Ermou Street, Athens - Lamia National Rd, Nea Kifisia, 145 64	Anastasios Kallitsantsis Chairman T: +30 (0)210 8185000	1,533	1,943	1,866	1,857	5,906	GR CYP US RO UK	
www.ellaktor.com  ENKA Turkey	Balmumcu Mahallesi Zincirlkuyu Yolu No. 10 Besiktas 34349	F: +30 (0)210 8185001  Agah Mehmet Tara Chairman T: +90 (0) 212 2741800				2,211	22,453	GRTU	
www.enka.com  FAYAT GROUP*  France	Istanbul  208 Boulevard du Mercantour 208-212-Space B 06200 Nice	F: +90 (0) 212 2664699	3,440	3,527	3,716	4,368	19,100	FR	
www.fayat.com FCC Spain	Calle Balmes, 36 Barcelona, 08007	F: Pablo Colio Abril CEO & Executive Director	6,476	5,952	5,802	5,990	56,372	SAm US IE UK DE Mex CN	
www.fcc.es		T: +34 (0)93 4964900 F: +34 (0)93 4878892							
FERROVIAL Spain www.ferrovial.es	Principe de Vergara 135, 28002 Madrid	Ignacio Madridejos Fernánde CEO T: +34 (0)91 5862500 F: +34 (0)91 5862677	9,701	10,759	12,208	5,737	17,370	FR DE LUX PO ES CH ME FE NAm AF	
GALLIFORD TRY UK www.gallifordtry.co.uk	Cowley Business Park, Cowley, Uxbridge, UB8 2AL	Graham Prothero CEO & Executive Director T: +44 (0)1895 855001 F: +44 (0)1895 855298	3,231	3,038	3,293	3,569	5,737	UK UD AF	
GEK TERNA Greece	85 Mesogeion Avenue, Athens, GH 115 26	Georgios Peristeris CEO T: +30 210 6968000	972	1,163	1,185	1,402	5,107	GR US DK CN	
vww.terna.gr GHELLA SPA taly	Via Pietro Borsieri 2/A, Roma, RM, 00195	F: +30 210 6968098 Giandomenico Ghella President T: +39 06456031				416.4	2,904	ІТ	
www.ghellagroup.com		F: +39 0645603040							
<b>GLAVSTROY*</b> Russia www.glavstroy.ru	45/1, Build.1, Prechistenskaya naberezhnaya, Moscow 119019	Arkady Sarkisyan CEO T: +7 (0)495 644 02 00 F: +7 (0)495 644 02 02	1,351	1,349	1,396	1,484	20,500	NL DE BE AF	
GOLDBECK Germany	Rathenower Str. 29 Stendal, Sachsen-Anhalt 39576	Arno Wilke	1,880	2,080	2,481	2,551	3,905	US DE	
www.goldbeckbau.de		T: +49 (0)39 31258200 F: +49 (0)521 9488 549							
GRUPO SAN JOSE Spain www.grupo-sanjose.com	C/Rosalía de Castro, 44 Pontevedra, Galicia 36001	Jacinto Rey González Executive Chairman & CEO T: +34 (0)34 986866464 F: +34 (0)91 806 54 01	536	613	683	758	2,723	ES UK	
HEIJMANS Netherlands www.heijmans.nl	Graafsebaan 65, 5248 JT Rosmalen	A.G.J Hillen Chairman & CEO T: +31 (0)73 5435111 F: +31 (0)73 5435220	1,979	1,370	1,402	1,579	4,554	NL DK ME	
HENRY BOOT  UK  www.henryboot.co.uk	Banner Cross Hall, Sheffield, S11 9PD	John T Sutcliffe CEO T: +44 (0)114 255 5444 F: +44 (0)114 258 5548				474.25	434	UK	
HOCHTIEF Germany www.hochtief.de	Alfredstrasse 236 Essen, Nordrhein-Westfalen 45133	Pedro José López Jiménez Chairman-Supervisory Board T: +49 (0)201 8240	21,097	19,908	22,630	23,882	55,777	AU US NZ DE	
HURKS 5612 WB Eindhoven	Pastoor Petersstraat 3, Chairman	F: +49 (0)201 824 2777 Gerardus Hurks				273.66	590	NL Netherlands	
www.hurks.nl		T: +31 (0)40 26 26 100 F: +31 (0)40 26 26 101							
MPLENIA Switzerland vww.implenia.com	Industriestrasse 24, Dietlikon 8305	André Wyss CEO T: +41 58 4747474 F: +41 58 4747475	3,074	3,000	3,544	4,008	9,342	CH DE FR US CN	
NTERSERVE JK	Ruscombe Park, Twyford, Reading RG10 9JU	Debbie White CEO & Executive Director T: +44 (0)118 932 0123	4,409	3,835	3,893	3,497	55,350	UK AF US ME	
www.interserveplc.co.uk  ISG  UK	Aldgate House, 33 Aldgate High Street, London EC3N 1AG	F: +44 (0)118 932 0206  Paul Cossell CEO T: +44 (0)20 7247 1717	2,268	1,618	2,080	2,679	2,743	UK US	

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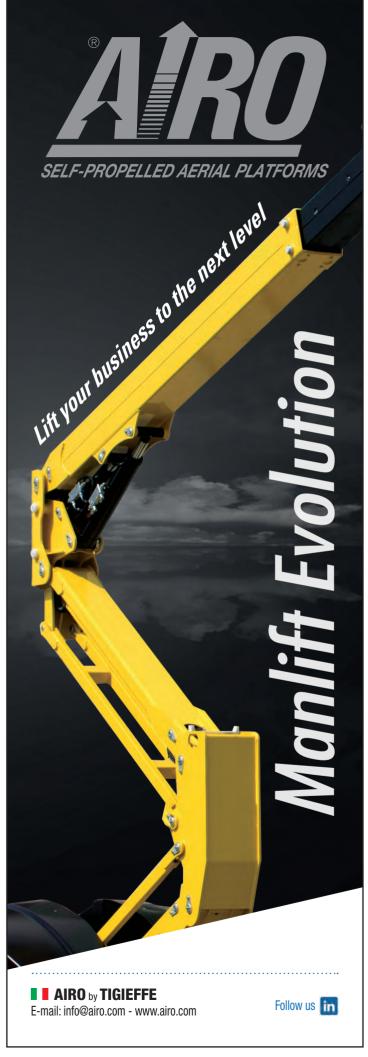












COMPANY COUNTRY		SENIOR EXECUTIVE		IN € M	NOVER ILLION		NUMBER OF	MAIN AREAS OF OPERATION
WEBSITE ISOLUX CORSAN*	POSTAL ADDRESS  De Avenida Manoteras,	& CONTACT DETAILS  Javier Carretero Manzano	<b>2015</b> 2,204	<b>2016</b> 1,447	<b>2017</b> 2,128	<b>2018</b> 2,000	5,604	(SEE P49 FOR COUNTRY KEY) ES Sam US IN Spain
www.isoluxcorsan.com	18 4ª Planta Madrid 28050 Madrid	Executive Director T: +34 9144 93000 F: +34 9144 93333	2,204	1,447	2,120	2,000	3,004	es sam os in spain
JAN DE NUL Belgium	Tragel 60, Aalst, Oost-Vlaanderen, 9308	Jan-Pieter De Nul General Manager T: +32 (0)53 210 038	2,244	2,044	1,138	1,707	1,165	ME CN LU UK Sam CR FR AU BE
www.jandenul.com		F: +32 (0)53 77 17 60						
JANSSEN DE JONG Netherlands www.jajo.com	Ekkersrijt 4010, 5692 DA Sonen Breugel Postbus 131	P. van Gulik President T: +31 (0)499 491700 F: +31 (0)499 472600				383.38	968	NL
,,	Correction Declaration	``	1 400	1.615	1.025	1.656	2.620	CW DE NO F'
I <b>M</b> Sweden vww.jm.se	Gustav 111, Boulevard 64, Solna, Stockholm, 169 82	Hans Johan Skoglund President & CEO T: +46 (0)8 7828700 F: +46 (0)8 7828600	1,490	1,615	1,825	1,656	2,630	SW DE NO Fin
KAMPA	Uphauser Weg 78,	Michael Wilkens				231	909	DE
Germany www.kampa-ag.de	32429 Minden	Chairman T: +49 (0) 571 95 570 F: +49 (0)571 95 57476				231	303	
KAUFMAN & BROAD	127, avenue Charles de Gaulle,	Nordine Hachemi	1,063	1,238	1,390	1,558	889	FR, RU, TK, CIS, AT, IN
rance www.kaufmanbroad.fr	Neuilly-sur-Seine (Cedex), 92200	Chairman & CEO T: +33 (0)1 41 43 43 43 F: +33 (0)1 41 43 46 64						
KELLER GROUP	1 Sheldon Square, 5th Floor, London W2 6TT	Micahel James Speakman CEO & Director T: +44 20 76167575	2,150	2,168	2,521	2,709	10,727	UK US AU NO AF ME ES UK
www.keller.co.uk	T 6 111    6 1	F: +44 (0)20 8340 6981	4.507	5.000	5.006	5.420	40.054	
<b>(IER GROUP</b> JK www.kier.co.uk	Tempsford Hall, Sandy, Bedfordshire SG19 2BD	Haydn J Mursell CEO & Executive Director T: +44 (0)1767 355000 F: +44 (0)1767 355633	4,507	5,008	5,006	5,139	19,251	UK
KÖSTER*	Control Character 200	``	020	020	1 100	1 210	1.750	NL
Germany www.koester-bau.de	Sutthauser Strasse 280, 49080 Osnabruck	Dieter Köster Chairman T: +49 (0)54 1999 80 F: +49 (0)54 1999 81 099	930	930	1,180	1,210	1,750	NL
LAGAN CONSTRUCTION UK www.laganconstruction.com	21-23 Sydenham Road, Belfast, BT3 9HA	Malachy Hughes Managing Director T: +44 (0)28 9045 5531 F: +44 (0)28 9045 8940				61.85	510	UK, IE
LAING O'ROURKE UK www.laingorourke.com	Bridge Place, Anchor Bvd, Crossways Business Park, Dartford, Kent DA2 6SN	Raymond O'Rourke Director T: +44 (0)1322 296200 F: +44 (0)1322 296262	4,307	3,060	3,863	2,243	8,146	UK AU ME
LSR Russia	ul. Kazanskaya 36, Sankt-Peterburg, 190031	Dmitry Valeryevich Goncharov Chairman T: +7 (0) 812 3205642	1,278	1,323	1,369	1,975	10,645	SU UK R-Fed
www.lsrgroup.ru		F: +7 (0) 812 3205642						
MAIRE TECNIMONT italy	Via Gaetano De Castillia 6/A, Milan, 20124	Fabrizio Di Amato Chairman T: +39 02 63131 F: +39 02 63139002	1,637	2,409	3,502	3,614	6,140	IT SU R-Fed NL US AF
MAX BOEGL*	Max Bögl Group	Stefan Bögl	1,632	1,650	1,700	1,900	6,000	UK ME FE NAm AF
Germany vww.max-boegl.de	Max-Bögl-Straße 1, 92369 Sengenthal	CEO T: +49 (0) 9181 9090 F: +49 (0) 9181 905061	1,032	1,030	1,700	1,900	0,000	OKINETE IVAITAL
METROSTAV AS Czech Republic	Kozeluzska 2450/4, 180 00 Praha 8	Frantisek Kocí Chairman	704	667	649	818	2,964	ES FR DE PT NAm SAm
www.metrostav.cz		T: +420 (0)266 018000 F: +420 (0)266 709 187						
<b>MICHANIKI</b> Greece	91 Meg. Alexandrou St, Marousi, Athens 151 24	Elefterios Spyridon Trivouldis Director T: +30 210 8097100				14.9	67	GR
www.michaniki.gr		F: +30 210 6143359						
MILLER HOMES JK	Earl Grey Way North Shields, Tyne And Wear NE29 6AR	Chris Endsor Chief Executive T: +44 (0)870 3364100	687	688	822	822	897	UK US
www.millerhomes.co.uk		F:						
MORGAN SINDALL JK	Kent House, 14-17 Market Pl, London, W1W 8AJ	John Morgan CEO & Executive Director T: +44 (0)20 7307 9200	3,281	3,120	3,400	3,619	6,206	UK US EU
www.morgansindall.co.uk	CD: 11	F: +44 (0)20 7307 9201	244=	2265	2.00	2.70		LIC.
MOSTOTREST Russia	6 Barklaya str., bld. 5, Moscow, 121087	Vladimir Vlasov CEO T: +7 (0) 495 669 79 99	2,107	2,363	2,900	2,784	15,729	US

COMPANY COUNTRY WEBSITE	POSTAL ADDRESS	SENIOR EXECUTIVE	2015	TURNOVER IN € MILLION 2015 2016 2017 20			NUMBER OF	MAIN AREAS OF OPERATION (SEE P49 FOR COUNTRY KEY)	
MOTA-ENGIL Portugal www.mota-engil.pt	POSTAL ADDRESS  38 Rua do Rego Lameiro, Edificio Mota No. 38, Porto, 4300-454	& CONTACT DETAILS  Gonçalo Moura Martins Vice Chairman & CEO T: +351 (0)22 5190300 F: +351 225 191261	2,434	2,210	2,597	<b>2018</b> 2,801	31,992	PT UK US CN Sam AF	
MOURY CONSTRUCT Belgium www.moury-construct.be	rue du Moulin 320, Liege, WA 4020	Georges Moury Chairman T: +32 4 3447211 F: + 32 4 3412290				111.37	241	BE NL	
NCC GROUP Sweden www.ncc.se	Vallgatan 3, 170 80 Solna	Peter Wågström President & CEO T: +46 (0)8 585 510 00 F: +46 (0)8 85 77 75	6,680	5,592	5,769	6,486	17872	JP	
NEXITY France www.nexity.fr	19, Rue de Vienne, TSA 50029, Paris, Ile-de-France 75801	Alain Dinin Chairman & CEO T: +33 1 85551212 F:	2,876	2,975	3,353	3,940	10,093	Global	
NGE France www.nge.fr	Parc Saint Christophe, 10 avenue de l'Entreprise, 95863 Cergy Pontoise Cedex	Antoine Metzger President T: +33 (0) 4 90 91 60 00 F: +33 (0) 4 90 91 60 01	1,497	1,592	1,869	2,028	800	AF US UK IN Sam	
OBRASCON HUARTE LAIN Spain vww.ohl.es	Torre Espacio, 259 D, Paseo de la Castellana Madrid, 28046	Juan Villar-Mir de Fuentes Chairman T: +34 (0)91 3484100 F: +34 (0)91 3484207	4,369	3,863	3,216	2,907	18,373	UK Mex ES DE SAm US IE AT	
PBLC .atvia vww.pblc.lv	66 Gertrudes, lela Riga, LV-1009	Peteris Antonovs Chairman T: +371 67718605 F: +371 67718610			1.77	9	LV, RU		
PEAB weden	Margretetorpsvagen 84, Forslov, 260 92	Jesper Göransson President, CEO T: +46 (0)431 89000 F: +46 (0)431 451700	4,828	4,895	5,292	5,518	14,614	SW NO Fin DE	
PER AARSLEFF AS	Hasselager Allé 5, 8260 Viby J	Jesper Kristian Jacobsen CEO T: +45 (0)87 44 22 22	1,375	1,397	1,503	1,626	6,499	DK Denmark	
www.aarsleff.dk		F: +45 (0)87 44 22 49							
PERSIMMON  JK  Dersimmonhomes.com	Persimmon House, Fulford, York YO19 4FE	Jeffrey Fairburn Chief Executive T: +44 (0)1904 642199 F: +44 (0)1904 610014	3,992	3,819	4,167	4,551	4,713	IT ME FE NAm SAm AF	
PETROFAC JK www.petrofac.com	4th Floor, 117 Jermyn Street, London SW1Y 6HH	Ayman Asfari CEO & Executive Director T: +44 (0)20 7811 4900 F: +44 (0)20 7811 4901	6,164	7,105	6,046	5,323	11,500	UK UAE ME Mex US AF	
PIZZAROTTI taly www.pizzarotti.it	Via Anna Maria Adorni, 1 - 43121 Parma	Paolo Pizzarotti President T: +39 0521 2021 F: +39 0521 616930	1,121	539	455	658	612	IT RO	
POLIMEX MOSTOSTAL Poland www.polimex-mostostal.pl	al. Jana Pawla II 12, Warszawa, 00-124	Wojciech Kowalczyk Chairman T: +48 (0)22 8297100 F: +48 (0)22 8260493	609	611	555	375	4,340	PL CZ NL DE BE SE	
PORR Austria vww.porr.at	Absbergasse 47, Vienna 1100	Karl-Heinz Strauss CEO T: +43 (0)50 6260 F: +43 (0)50 6261111	3,140	3,417	4,293	4,959	17,372	PO AT DE ME CZ US	
REDROW JK vww.redrowplc.co.uk	Redrow House, Flintshire, St. David's Park CH5 3RX	Stephen Peter Morgan Chairman T: +44 (0)1244 520044 F: +44 (0)1244 520580	1,582	1,849	2,021	2,338	2,200	UK	
RENAISSANCE CONSTRUCTION* Furkey vww.rencons.com	No:33 Portakal Cicegi Sokak, Yukari Ayranci, Cankaya Ankara, 06540	llicak Kayaalp Director T: +0 3124413141 F: +90 3124425948	2,166	2,992	2,060	1,401	30,571	TUR ME JP AF EU SU UK	
RENEW HOLDINGS UK www.renewholdings.com	3175 Century Way Thorpe Park Leeds, West Yorkshire LS15 8ZB	Paul Scott CEO T: +44 113 2814200 F: +44 1132814210	715	641	683	658	2,864	UK	
ROBERTSON GROUP JK www.robertson.co.uk	10 Perimeter Road, Elgin IV30 6AE	Bill Robertson Managing Director T: + 44 1343548621 F:				898.6	701	UK	
RZD STORY* Russia	8 ul. Kazakova, 105064, Moscow	Oleg Toni VP & Director Genera T: +7 (0)499 260 34 32 F: +7 (0)499 260 34 00	891	809	837	877		IN	





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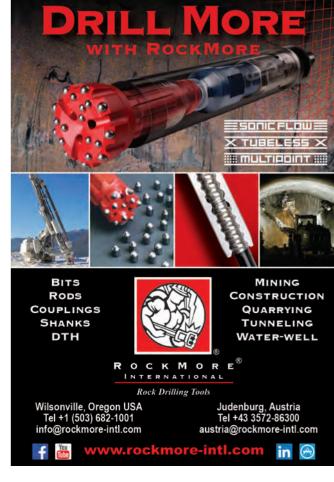
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SACYR VALLEHERMOSO Spain www.sacyr.com	Paseo de la Castellana 83-85, 28046 Madrid	Manuel Manrique Cecilia Chairman & CEO T: +34 91 5455000 F: +34 91 5566986	2,949	2,860	3,092	3,796	42,824	UK IE ES DE SAm
SAIPEM Italy www.saipem.it	Via Martiri di Cefalonia, 67, San Donato Milanese, Milan, 20097	Stefano Cao CEO & Executive Director T: +390 (0)2 5201 F: +390 (0)2 5204 415	11,507	9,976	8,666	8,526	33,936	IT AF UK US NO DE
SALINI IMPREGILO Italy www.impregilo.it	Via dei Missaglia, 97, Milan, 20142	Pietro Salini CEO & Director T: +39 02 24422111 F: +39 02 24422293	4,595	5,760	5,939	4,864	26,564	FR UK BE DE DK GR CZ
SISK GROUP* Ireland www.siskgroup.com	Wilton Works, Naas Road, Clondalkin, Dublin 22	Richard Sisk Director T: +353 (0)1 4091500 F: +353 (0)1 4566108	650	535	500	600	2,800	IE UK AF
SKANSKA Sweden www.skanska.com	Warfvinges väg 25 Stockholm, AB 112 74	Anders Danielsson President & CEO T: +46 (0)10 4480000 F: +46 (0)8 755 12 56	16,358	15,357	16,990	18,059	37,450	US SW UK Fin NO DK
SPIE France www.spie.eu	Parc Saint Christophe, 10 avenue de l'Entreprise, 95863 Cergy Pontoise Cedex	Gauthier Louette Chairman T: +33 (0)1 34418181 F: +33 (0)1 34243321	5,432	5,156	6,128	6,693	46,852	FR
SRV GROUP Finland www.srv.fi	Derby Business Park, Tarvonsalmenkatu 15, Espoo, UU 02601	Saku Petri Tapio Sipola CEO T: +358 (0)201 455 200 F:	719	884	1,100	959	1,057	FI SU IN
STRABAG Austria www.strabag.com	Donau-City-Strase 9 Vienna, Wien (Vienna) 1220	Thomas Birtel CEO T: +43 (0)1 224 220 F: +43 (0)1 224 221 003	13,123	12,400	13,508	15,221	72,904	AT CR ME DE UAE CN PO
STRUKTON GROEP Netherlands www.strukton.com	Westkanaaldijk 2 - Utrecht P.O. Box 1025 - 3600 BA MAARSSEN	Gerard Sanderink Chairman T: +31 (0) 30 248 69 11 F: +31 (0) 30 248 64 66	1,680	2,300	1,907	1,916	6,865	AU FI CIS SE ME AF
SWIETELSKY Austria www.swietelsky.com	Edlbacherstraße 10, A - 4020 Linz	Peter Gal Managing Director T: +43 (0) 732 69710 F: +43 (0) 732 6971 7110	2,069	1,976	1,904	2,213	9,475	NL
TAYLOR WIMPEY UK www.taylorwimpey.com	Gate House, Turnpike Road, High Wycombe, Bucks, HP12 3NR	Pete Redfern CEO & Executive Director T: +44 (0)1494558323 F: 44 (0)121 600 8001	4,320	4,477	4,828	4,971	5,565	UK ES DE US EU
TBI HOLDINGS BV* Netherlands www.tbi.nl	Wilhelminaplein 37, PO Box 23134, 3001 KC Rotterdam	Daan Sperling CEO T: +31(0)10 290 85 00 F: +31(0)10 486 57 88	1,577	1,573	1,600	1,708	5,701	NL
TECHINT Italy www.techint.it	Via Monte Rosa 93, 20149 Milano	Paolo Bigi CEO T: +39 02 4384 1 F: +39 02 4693026	1,803	0	0	1,515	3,665	П
TECHNIPFMC UK www.technip.com	1 St Paul's Churchyard, London, EC4M 8AP	Maryann Mannen Executive VP & CFO T: +33 (0)1 47782121 F: +33 (0)1 47783340	10,338	13,742	15,085	12,559	37,000	KR
TECNICAS REUNIDAS Spain www.tecnicasreunidas.es	c/Arapiles 13, Madrid, Madrid 28015	Jose Llado Fernandez-Urrutia Chairman T: +34 (0)91 5920300 F: +34 (0)91 5920397	4,188	4,793	5,067	4,396	8,644	US
<b>TEERAG-ASDAG</b> Austria www.teerag-asdag.at	Grazer Strasse 36a, Stegersbach, Burgenland, 7551	Johann Dolesch Managing Director T: +43 (0) 3326523670 F: +43 (0)3326 52367220				35.65	4,489	AT CZ HU, PL SK
TEIXEIRA DUARTE Portugal www.tduarte.pt	Lagoas Park, Edificio 2, Porto Salvo, 2740-265	Pedro Teixeira Duarte Chairman T: +351 (0)21 7912300 F: +351 (0)21 7941120	1,412	1,115	1,035	873	10,245	BE NL EU AF ME FE NAm
TEKFEN HOLDING Turkey www.tekfen.com.tr		Osman Cengiz Birgili President T: +90 212 3593300 F: +90 212 3593305	1,287	1,418	1,543	2,127	18,296	UK
TREVI SPA Italy	Via Dismano 5819, Cesena, FC 47522	Cesare Trevisani President T: +39 0547 319311 F: +39 0547318542	1,342	1,081	1,033	1,080	7,867	PT

COMPANY COUNTRY WEBSITE	DOCTAL ADDRESS	SENIOR EXECUTIVE & CONTACT DETAILS	2015	IN € M		2010	NUMBER OF EMPLOYEES	MAIN AREAS OF OPERATION
VAN OORD Netherlands www.vanoord.com	POSTAL ADDRESS  Schaardijk 211, 3063 NH Rotterdam	G van Oord CEO T: + 31 88 8260000 F: +31 888265010	<b>2015</b> 2,579	<b>2016</b> 1,710	1,530	<b>2018</b> 1,880	5,000	(SEE P49 FOR COUNTRY KEY) TR, ME
VAN WIJNEN* Netherlands  Www.vanwijnen.nl  Postbus 76, 3740 AB Baarn		C.W.J. van Bemmel CEO T: +31 (0)35 548 28 28 F: +31 (0)35 548 28 27	693	700	750	850	1,659	CAN US
VEIDEKKE Norway www.veidekke.no	Skabos vei 4, Oslo, PS 0278	Sven Richard Brandtzæg Chairman T: +47 (0)21 05 50 00 F: +47 (0)21 05 50 01	2,688	3,064	3,235	3,806	8,568	NO SW DK
VINCI France www.vinci.com	1, cours Ferdinand de Lesseps 92851 Rueil-Malmaison	Xavier Huillard Chairman & CEO T: +33 (0)1 47 16 35 00 F: +33 (0)1 47 163591	39,161	38,547	40,876	44,150	183,487	FR UK DE ES PT CZ SK
VOLKERWESSELS Netherlands www.volkerwessels.com	Podium 9 Amersfoort,  Utrecht 3826 PA	Jan de Ruiter Chairman T: +31 (0)31 881866186 F: +31 (0)88 1866187	4,906	5,490	5,714	5,924	16,001	ES SAm
WALO BERTSCHINGER* Switzerland www.walo.ch	Giessenstrasse 5, Dietikon, ZH 8953	Beat Mathys Chairman T: +41(0)17 45 23 111 F: +41(0)17 40 31 40				230.2	2,000	CH FR UK
WARBUD Poland www.warbud.pl	Ul. Domaniewska 32, Warszawa, Mazowieckie 02-672	Werle Jerzy Józe President T: +48 (0)22 56 76 000 F: +48 (0)2256 76 001				366.3	1,175	PO
WATES GROUP UK www.wates.co.uk	Wates House Stn Approach Leatherhead, Surrey KT22 7SW	Jonathon Wates Director T: +44 (0)137 2861000 F: +44 (0)20 8679 8223	1,661	1,863	1,863	1,827	2,222	UK









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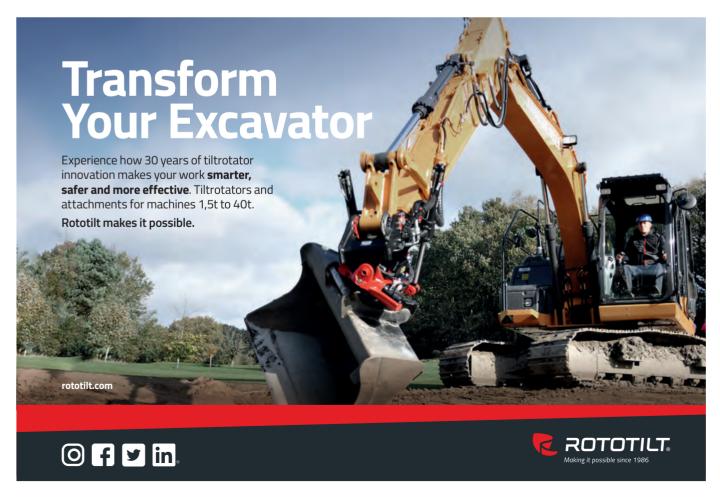


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WILLMOTT DIXON UK www.willmottdixon.co.uk	Spirella 2, Letchworth HERT SG6 4GY	Richard Willmott Director T: +44 (0)1462 671852 F: +44 (0)1462 681852	1,824	1,489	1,489	1,611	3,210	MY					
YIT Finland www.ytigroup.com	Panuntie 11, FIN-00621, Helsinki	Kari Kauniskangas President & CEO T: +358 (0)20 433111 F: +358 (0)20 4333700	1,732	1,678	1,993	3,689	9,070	Fin SU SW ES CZ					
ZIPP BRNO Czech Republic www.zipp.sk	Kastanová 489/34, Brno - Brnenské Ivanovice, 62000	Josef Tesar Member of the Board T: +420 545423061 F: +421 (0)2 492 41 420				17.8	79	SK CZ PL DE					

Key	to areas of wor	k codes:		FR GB	France Great Britain/UK	ME MEX	Middle East/Asia Pacific Mexico	SAm SF	South America Finland
AF	Africa	CR	Croatia	GR	Greece	ML	Maldives	SL	Slovakia
AP	Asia Pacific	CYP	Cyprus	HK	Hong Kong	NAm	North America	SU	Russia
AT	Austria	CZ	Czech Republic	HU	Hungary	NL	Netherlands	SW	Sweden
ΑU	Australia	DE	Germany	IE	Ireland	NO	Norway	TU	Turkey
3E	Belgium	DK	Denmark	IN	India	NZ	New Zealand	UK	United Kingdom
3U	Bulgaria	ES	Spain	IT	Italy	PL	Poland	UAE	United Arab Emirates
CH	Switzerland	EU	Europe	JP	Japan	PT	Portugal	YU	Yugoslavia
CIS	Conf. Ind. States	FE	Far East	LU	Luxembourg	R-Fed	Russian Federation		•
CN	China	Fin	Finland	LV	Latvia	RO	Romania		



## On the right track

### Derek Bryan, VP EMEA at Verizon Connect, looks at leveraging the Internet of Things to unlock the next generation of asset tracking in construction

There is a thin line between asset tracking and the Internet of Things (IoT). From simply keeping track of equipment in a spreadsheet to using RFID or GPS to log equipment usage and location electronically, most construction businesses will typically have some form of asset tracking system already in place. However,

new developments in numbercrunching power and advances in all-in-one software platforms, are helping construction businesses enhance their asset tracking capabilities by embracing loT, arguably the next evolutionary step in the development of asset tracking.

IoT makes asset tracking data actionable by adding context. In other words, identifying not just where equipment is being used,

but how it is being used and by whom. The industry has evolved to the point where any tool or asset can be inexpensively connected via IoT sensors and data relating to its usage and/or condition can be captured, interpreted and acted upon. With this information in hand, managers can make better informed decisions regarding whether

> it's necessary to rent additional equipment or simply retrieve underutilised, owned equipment from another job site and deploy it elsewhere.

These are just some of the wavs in which construction managers can get the most value from IoT...

Derek Bryan, VP EMEA at Verizon Connect





### **KEEP YOUR MOST IMPORTANT ASSETS HEALTHY WITH MAINTENANCE MANAGEMENT**

Upgrading your asset tracking to the level of IoT means more than just developing an understanding of where your assets are. Sensors can be used to send status updates on a range of events, including temperature change, excessive vibration or door movement. This helps track mechanical wear and tear and schedule necessary maintenance (based on usage metrics, such as engine hours) or create alerts for parts when they need replacing.

It's easy to take your business' assets for granted until they go missing or break down. Using a digital solution to track and regulate equipment maintenance can therefore help protect the lifeblood of businesses and prevent costly downtime. For powered equipment that requires preventative maintenance or routine fixes, a consolidated asset tracking solution can provide a holistic view of maintenance alerts, regardless of manufacturer. Moreover, paperless inspections can help automate the monitoring of equipment condition, which improves on-the-job safety, productivity and overall job efficiency.



### **COMBAT THE HIGH COST OF THEFT AND UNAUTHORIZED ASSET USE**

Given the cost of purchase and the risk of theft, it's no surprise that a company that leases or owns construction equipment would want to keep a close eye on its assets. With an intelligent asset tracking solution in place, construction firms can receive notifications when a piece of equipment is operated during an unauthorised time period or even if a piece of equipment is being moved out of hours or outside an approved area. This feature is particularly critical for smaller construction firms that may lack extensive job site security resources or security technology.

'Geofences' allow construction managers to easily draw up virtual perimeters around the area in which equipment is authorised to be used. If assets leave that perimeter, they can be instantly notified either via SMS alerts or via their asset tracking software platform's mobile application. These instant alerts allow managers or their security teams to notify law enforcement immediately, if required, potentially reducing damage and accelerating recovery.



#### GET THE MOST OUT OF YOUR ASSETS WITH UTILISATION REPORTS

Are assets giving a good return on investment (ROI), or are they sitting idle most of the day? Asset utilisation reports can help identify equipment with low ROI, providing managers with the numbers they need to identify equipment that can be sold off or repurposed somewhere else in the business, or to review how often and for how long a piece of equipment is used on a particular day or during certain periods of time. That data can be matched against the progress of work accomplished to identify discrepancies or inefficiencies. Monitoring asset information, such as time of use, idle time, employee usage and maintenance dates, also helps construction firms to reduce or eliminate unnecessary fuel and labour costs that can eat away at profit margins.



#### CONSOLIDATE ALL YOUR CONSTRUCTION **EQUIPMENT DATA IN ONE PLACE**

Construction companies own and operate thousands of powered and non-powered assets of various makes, models and manufacturers. These various systems are independent, meaning construction site or equipment managers must access several different sources to pull the asset data they need. Any investment in IoT, therefore, must be matched with investment in a single, complete asset-tracking software system. In so doing, construction firms can make sure all the data from their powered and nonpowered assets is consolidated and centralised, regardless of make, model or manufacturer. With this holistic approach in mind, companies can gain an enhanced level of visibility of assets and deliver positive returns on their investment in IoT.



### CUTTING COSTS AND IMPROVING PRODUCTIVITY IN CONSTRUCTION

### WHY INVESTING IN MAINTENANCE MATTERS

Over three-quarters of construction firms say extending machinery life is a priority<sup>1</sup>. But equipment breakdowns are frequent, leading to unexpected downtime and often significant repair costs.

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