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DEMOLITION PORTFOLIO

DIRECTORY



SPECIAL REPORT



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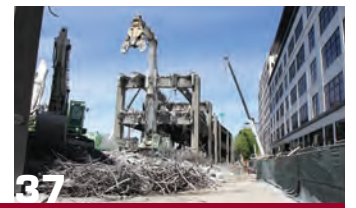
eNEWSLETTER



www.demolitionsummit.com

ON THE COVER

The redesigned Hitachi Zaxis-7 Stage V-compliant model, fresh from rigorous testing in Japan, is just one of the excavators covered in our four-page feature starting on page 22



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Industry concerns over long-term bail outs for Covid-19

Two major figures from Europe's demolition industry have expressed concerns that financial help for the sector from national governments could be counter-productive if it goes on too long.

David Darsey, managing director of the demolition division of the United Kingdom's Erith Group, and Martin Krupicka, president and CEO of Swedish demolition machine manufacturer Brokk, made the comments in the recent "Demolition after Coronavirus" webinar hosted by D&Ri, where they were joined by European Demolition Association president Francisco Cobo.

Like many industries, demolition was hard hit by the Covid-19 pandemic and government intervention was essential to ease the short-term financial hardship caused by the



Martin Krupicka

effect of the crisis on demolition sites and projects.

Both David and Martin praised the actions of the UK and Swedish governments respectively but said there are dangers in continuing these and similar measures elsewhere in Europe for longer periods.

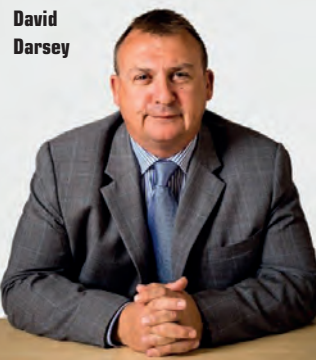
"I actually think most governments have done quite a bit and I would say overall that what they have done has been quite adequate to meet the market lockdowns that have been imposed," Martin told the online audience.

"I think though in the longer term there is a risk especially in Europe where sometimes, maybe not in the UK but other parts of Europe, there might be a tendency to keep these things on for too long.

"In six months, we might start talking about how long is long enough and when does it become too long to have these measures in place?

"Once the lockdowns that are artificial from a market standpoint have ended, it's important in weaker markets that companies learn to deal with that situation and not be on some sort of artificial aid for years to come."

David added: "From the point of view of a demolition contractor in the UK I think the government, in terms of the



David Darsey

furlough scheme, has come out and acted very quickly. It is a more than adequate scheme to help people and their families.

"What I am concerned about is the length of time that it has been made available. So rather than it being like an emergency fund, all the time you are not able to go to work there's assistance and funding, which at some point taxpayers will have to pay for.

"I'm concerned that people will become institutionalised and quite like receiving 80% of their salary and not having to work for it, and I do think there's a danger that if it goes through to October that's too long."

You can read more highlights from the webinar elsewhere in this issue.

To see the full 55-minute recording please visit the Premium Content section of www.khl.com

DEMOLITION BITS

■ A project to redevelop riverside land in the USA received assistance from **Mammoet** to lower the 134 m (439 ft) long main truss of a redundant sports arena and complete its demolition.

The Joe Louis hockey arena is in downtown Detroit, Michigan, close to the USA-Canada border. What made the job tricky was its proximity to a metro centre and a large sewer main ran underground beneath the truss, making it a dismantling job rather than an implosion.

Incorporated into the truss was the arena's penthouse, helping to make it the largest component on the job. It was also the last to be removed. The original proposal was to take the steel and concrete truss apart a beam at a time.

Working for local contractor Adamo Group, Mammoet lowered the entire truss in one piece for easier access to be dismantled on the ground. Large beams were inserted under the truss so it could be lifted from its existing supports using eight strand jacks and then lowered onto supports.

The truss was 25 m (82 ft) up and Mammoet lowered it to 6 m (20 ft) for cutting into more manageable chunks.

Prior to the lift and lower operation two pairs of 2.4 m (8 ft) tall girders, braced together, were put in to support the roof.

WDS 2020 goes virtual

Due to the ongoing issues relating to the Coronavirus, the World Demolition Summit (WDS) – previously scheduled for Vienna, Austria later in the year – will now take place as a digital/virtual online event.

It will be on the original date of Thursday November 12 and will take the form of a combined webinar and awards ceremony.

The webinar will be a modified version of the traditional conference programme, with fewer speakers and shorter presentations, but retaining



the same project-based mix of innovation and best practice that the WDS presentations have become well known for.

The awards will follow the same entry and shortlisting process as in previous years, with the winners announced on November 12.

Sponsorships for the event are available – please contact bridget.leary@khl.com or phone Bridget on +44 1892 786220.

Organised in co-operation with the European Demolition Association with the support of the National Demolition Association of the USA, the WDS is now in its 12th year. The 2019 event was attended by more than 450 demolition contractors and other industry professionals.

Headline sponsor for the event is Volvo Construction Equipment.



Workforce becomes owners at McGee

British specialist engineering contractor McGee has become employee owned through an Employee Ownership Trust (EOT).

The London-based company has been in business since 1959, most recently under the second generation of McGee brothers. It has worked on flagship infrastructure projects in the British capital including Wembley Stadium, Heathrow Airport T2B, Battersea Power



McGee managing director Seb Fossey welcomed the change to employee ownership

Station, the Londoner Hotel and the iceberg basement for Claridges Hotel.

In making the announcement, McGee said it

viewed employee ownership as the next logical step for the business.

“For us, it’s a move designed to secure the future of the business, continue the legacy that our father started and reward

the people who have made the business the success it is today,” said chairman Brian McGee.

“The McGee family will continue to actively support the business in its next chapter.”

Managing director Seb Fossey added: “The decision by the McGee brothers to transition ownership of the business to the group’s employees via an EOT underscores the respect for the contribution our people have made to the McGee business.

“At this time of crisis in the industry, our transition to employee ownership will serve as fuel for our business and will help enable us to emerge stronger.” ■

PEOPLE NEWS

■ Averda, an end-to-end waste management company specialising in emerging markets, has appointed **Esa**



Ikaheimonen as a non-executive director. He will sit on the board and be chairman of the audit and finance committee of the Dubai-based business.

Currently CFO/CCO and executive director at oil exploration and production company Genel Energy, Esa said: “I am joining Averda at a very exciting time for the business, as it looks to build on recent expansion and take advantage of the opportunities presented by a growing global population and increasing levels of urbanisation.”

Averda says construction and demolition waste is a core part of its business.

BPH Attachments in Middle East success

BPH Attachments has broken into the Middle Eastern market with its Prodem dedicated shears attachment range.

Purchased to demolish fire-damaged 35 m (114 ft) high fuel tanks for a project in Jeddah, Saudi Arabia, the Prodem PDS200R, PDS300R and PDS400R shears were selected to connect with the crew’s high reach excavators.

The company said that given the strenuous work the shears will be undertaking, the bolt-on piercing tip and blades – which can be turned up to four times before replacement – will ensure

that service downtime is kept to a minimum.

Furthermore, cycle times will be reduced thanks to a speed valve regenerates power and protects the shear eliminating internal oil pressure peaks, while the upper jaw guides make for easy and perfect alignment every time – increasing cutting power, efficiency and production for this major project.

As the world’s largest oil exporters, the Middle East region plays host to many disused tanks which have now been deemed more profitable to demolish rather than stand empty.



This is BPH’s first step into the Middle East market

“This is our first step into the Middle Eastern market and we are looking forward to a long and successful relationship with contractors throughout the region in the future,” said sales director Matt Bastable. ■

Hitachi CME to stop manufacturing in Europe

Hitachi Construction Machinery Europe (CME) is planning to cease manufacturing in Europe, instead importing standard machines from Hitachi’s factories in Japan for customisation at its facility in Amsterdam, Netherlands, and then distributing them across Europe.

As part of the change, the company’s production and assembly activities at Oosterhout, also in the Netherlands, will be shifted to Amsterdam.

This decision was said to be due to poor market conditions, “meagre” financial results in recent years, and changing market demands.

Hitachi said the decision had been made to secure the long term future of the business.

The changes could mean the loss of 115 jobs during 2021 and Hitachi has begun to consult the Works Council about the proposed relocation of Oosterhout.



Dutch manufacturer Tobroco-Giant has achieved the milestone of its 25,000th machine as it addresses the growing demand for electric wheel loaders.

The special edition G2200E X-TRA, weighing 2.2 t was produced at the company’s manufacturing facility in Oisterwijk, Netherlands and handed over to E-Den Hartog, a new company from Giant dealer Den Hartog Bouwmaterieel focusing on the sales and maintenance of electric machines.

Tobroco-Giant built its first wheeled loader almost 20 years ago and – having expanded the product range – celebrated the 10,000th in 2014. The company has an additional manufacturing site in Hungary and almost 600 dealers in 50 countries including a sales office in the USA.

“We are seeing stricter rules on emissions in more and more countries,” said director Toine Brock.

“At some point the European Union will set rules for Europe and the rest of the world will have similar rules as well.”

“Our customers request electrical machines, which is why we want to have a diesel and electric version of every Giant available in the long term. This year we will start developing electric machines in the 1.5, 2.5 and 3.5 t class. I expect that by 2025, 40% of our production will consist of electric wheel loaders.”

DIARY DATES

2020

IFAT

September 7 – 11
Munich, Germany
www.ifat.de

Diesel Progress Summit

October 20
Online event
www.dieselpgresssummit.com

Samoter

October 21 – 25
Verona, Italy
www.samoter.it

World Demolition Summit

November 12 (3pm UK time)
Online event
www.demolitionsummit.com

International Rental Conference

November 23
Shanghai, China
www.khl-irc.com

Bauma China

November 24 – 27
Shanghai, China
www.bauma-china.com

2021

World of Concrete

January 19 – 21
Las Vegas, USA
www.worldofconcrete.com

NDA Convention & Expo

March 4 – 7
New Orleans, USA
www.demolitionassociation.com

German Demolition Conference

March 5
Berlin, Germany
www.fachtagung-abbruch.de

Steinexpo

April 14 – 17
Hornberg/Nieder-Ofleiden,
Germany
www.steinexpo.eu

Intermat

April 19 – 24
Paris, France
Paris.intermatconstruction.com

European Demolition Association Convention

June 10 – 12
Belgrade, Serbia
www.europeandemolition.org

Hillhead

June 22 – 24
Buxton, United Kingdom
www.hillhead.com

Construction milestone for Saudi waste plant

The Saudi Investment Recycling Company (SIRC), a wholly-owned subsidiary of the Public Investment Fund (PIF), is marking a major construction

milestone at its first construction and demolition waste recycling plant in Saudi Arabia.

The plant is in the final stages of construction and is scheduled to be operational by the end of next month, signalling the first step towards meeting the national ambition of diverting 60% of construction and demolition waste from landfills by 2035 as the Kingdom accelerates its transition to a circular economy.

The facility is the first to be developed under the memorandum of understanding (MoU) signed in July 2019

Saudi Arabia aims to divert 60% of construction and demolition waste from landfills by 2035



between SIRC, the National Centre for Waste Management, and Amanat Al Riyadh for embracing integrated waste management and recycling activities in the capital.

Located in northern Riyadh, SIRC's new plant covers over 1.3 million sq m (14 million sq ft) of land allocated by Amanat Al Riyadh. Once commissioned, it will treat up to 600 t of waste per hour and achieve recycling rates of over 90%.

Eng Jeroen Vincent, CEO of the SIRC, said: "It is an honour to be working alongside Amanat Al Riyadh to build a state-of-the-art facility that sets a benchmark in every aspect of design and construction."

Heavy work at high speed for Doosan

Three Doosan excavators have helped demolish and replace a road bridge over a busy railway line in Germany within a tight timescale.

The contractor, Beller, had exactly 72 hours to complete the work – but it won the race against time with Doosan DX255LC-5, DX340LC-5 and DX380LC-5 excavators. Beller had bought the excavators from Doosan dealer, Ummerhofer, which is based in Pfullendorf in Baden-Württemberg, during the previous two years.

Demolition of the bridge was necessary because strong vibrations caused by the rail traffic had made it so unstable it could no longer be used

by heavy vehicles. A future-proof solution could only be created by demolition and new construction.

Apart from the time constraints, Beller had to be particularly careful about a main data line that connects a large part of the region to the internet and runs through the construction site area.

At exactly midnight, rail operations were stopped and approval given to start work. From then on, around the clock, the operation was carried out in shifts. After the railway line was covered, the excavators created a gravel bed protect it and demolition started. Particular attention was also



Vibration from rail traffic had made the bridge so unstable it could no longer be used by heavy vehicles

paid to protecting the overhead lines. With the help of several pulverisers, chisels and grabs, the DX340LC-5 and DX255LC-5 tackled the old foundations and the DX380LC-5 the superstructure.

The actual demolition was completed in a short time, and around 800 t of concrete was removed and reused in Beller's own reprocessing plants.

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We are also now producing a high-frequency

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The Erith Group have over a half century of complex enabling works experience, now occupying the position of Europe's 2nd largest demolition contractor.

Erith are proud to have recently been recognised with the World Demolition Awards for; Urban Demolition over US\$10M, Civils Demolition – as well as receiving the overall World Demolition Award for our Hanover Square project.

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A 2020 vision for life after Covid-19

Last month, three vastly experienced individuals took part in D&Ri's first webinar for the demolition industry, which considered how the industry has been affected by Covid-19, how it can bounce back, and what its longer-term prospects are. Here is an edited version of what took place.

STEVE DUCKER (D&Ri): HOW HAS CORONAVIRUS AFFECTED YOUR BUSINESS?

DAVID DARSEY (ERITH GROUP): We have had to adapt, starting with dialogue with clients and internally. The biggest challenge is we do a lot of work in central London and avoiding public transport while getting workers to and from the sites has not been easy. With the 2 m (6 ft 6 in) distancing, additional welfare, even staggering start times and finish times, there has been a lot of change but we are back to around 90% of our output before the pandemic.

MARTIN KRUPICKA (BROKK): We have operations in more than 15 countries and you can see when societies close down entirely, when they start easing up, we can almost monitor this day by day. When societies are in lockdown, all manufacturers are affected.

FRANCISCO COBO (EUROPEAN DEMOLITION ASSOCIATION): We have had regular meetings of the EDA board to monitor the situation and provide support to members. In some countries such as the Netherlands, Finland, Denmark, and Sweden government strategy on whether business stayed open had very little impact on the operations. Another group had some restrictions, but limited to one or two weeks, such as in Germany, Greece and Serbia. And there was another group where 50% of companies had to close for between two weeks and two months. Maybe not every company in the same country went through the same situation, but this was the scenario in countries such as Italy, Russia, Ireland and France.

AN AUDIENCE QUESTION, HOW HAVE COMPANIES ADAPTED TO VIRTUAL TRAINING?

DAVID: If I can answer that wearing both my Erith and National Demolition Training Group hats, we have had to adapt and deliver

virtual training. It took between a month and six weeks to get the programmes written, and "virtual friendly". But there has been a good success rate and a good take up. I think masses of people in classrooms is a thing of the past.

WHAT HAS BEEN YOUR EXPERIENCE WITH SOCIAL DISTANCING?

DAVID: This morning I put my hand out to shake somebody's hand. These are lifelong habits that we must change. One-way routes, washing of hands, sanitising your desk station, sanitising your work areas. Gatemen and logistics staff tend to start off 2 m apart at eight o'clock, by a couple of hours later they might be 1 m (3 ft 3 in) apart. It is like when it became compulsory to wear a seat belt in a car. Now it's automatic, but at first I always forgot. We are reinventing the wheel.

MARTIN: We have made adjustments and taken precautions with hygiene measures but it was not that difficult to readjust our production. The impact has been bigger in our sales and service companies. Do you go out to the customer or do you ship the machines back and forth? You have days when you work onsite and days when you work remotely, to reduce the number of people in a location. Remote meeting software has been an eye opener. It has so much potential to improve efficiency in our operation, so we are also learning some positives from this.

FRANCISCO, CAN YOU SAY WHEN WE CAN EXPECT DEMOLITION AND CONSTRUCTION TO GET BACK TO SOME SORT OF A NORMAL POSITION?

FRANCISCO: For the future, of course we want to always stay positive, we have to survive. The year before we had a meeting of the EDA board and I also have to mention the regular meetings we have with the National Demolition Association of the USA to monitor the situation, and in all of these meetings we close with a positive message. In many countries, the industry has been very positive. With demolition people, we face all kinds of unexpected difficulties every day and we will be ready to face this much more. But even with

Brokk expects demand for its machines, seen here on a project in Canada, to increase - but says the trend to mechanisation was already underway before Covid-19

To see the full 55-minute webinar, please visit <https://www.khl.com/premium-content/demolition-after-coronavirus/144616.article>



a crystal ball I don't think I could answer this question.

MARTIN: Trying to predict when things are back to normal is essentially impossible and not even the experts on the virus have succeeded. Unless we have some second waves coming up, most countries have left the worst part behind. But it will also take some time for business to get back to normal, whatever the new normal is, and that might mean waiting for vaccines to come in. I think we will get used to dealing with this situation and taking precautionary measures, and get back to a more normal state that way. The "real" normal is, I think, further down the line.

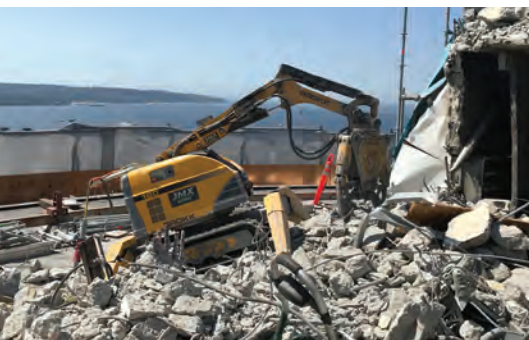
DAVID: Coronavirus is not going away any time soon. I think we are on what experts call a downward curve, but there are still a lot of deaths in Europe and around the world. I think the worst is behind us and there will be more to come in terms of adapting how we live and go to work.

WHAT HAS THE FINANCIAL IMPACT OF CORONAVIRUS BEEN?

MARTIN: In the short term the implications are quite dramatic. When societies manufacture a lot of equipment, and you shut down your sites and you go back and you can't go to work, you don't start ordering a lot more equipment and that is shared across the industry. But we can see how things are opening and we can see some activities restarting.

ANOTHER AUDIENCE QUESTION. IS THE LIKELY ECONOMIC CONTRACTION GOING TO CREATE A TIGHTENING OF THE DEMOLITION MARKET IN TERMS OF COST, OR A GREATER FOCUS ON QUALITY SAFETY AND HEALTH, WITH THE ACCEPTANCE OF POTENTIALLY HIGHER COSTS?

DAVID: Projects are suffering additional costs to cater for the new norm, I think somebody said. On one of our projects, with 80 operatives on site, we have had to spend about £90,000 (US\$110,000) to get welfare, additional cabins, two permanent cleaners, staggering shifts.





Many of Erith's projects are in central London and managing director of demolition David Darsey said that getting the workforce to and from sites in the early weeks of Coronavirus was a challenge in itself

There is a cost to it for us to keep that site going. That is from our budget.

FRANCISCO: In most European countries, the social system was pushed to the limits, with many governments helping companies to gain access to regular cash flow and helping the companies to maintain employment. Today, most demolition companies across Europe are active again but we are concerned about the last quarter of the year. We want to stay positive but we must be realistic.

DAVID: On average we return 20 bids a week, and they range from £50,000 (\$62,500) to say £10 million (\$12.5 million). Last week [ending May 29] we returned four. Although we are busy on site now, large jobs will not start until September or later. In the final quarter and next year I think there is a genuine catch up where we have stood still in terms of new opportunities for two or three months and then you're going into the winter and shorter days.

HOW HAVE YOUR CAPITAL EXPENDITURE PLANS CHANGED SINCE THE VIRUS?

DAVID: We have a rolling programme of plant replacement, which we are maintaining. However, we can put the brakes on that at six-month intervals and it has now become an agenda item at every board meeting. In terms of staff this has given us an opportunity to take stock. If you have got a business that is at 85 to 90% capacity but the overhead is at 100% something has got to give.

HOW HAVE BUSINESSES SOUGHT TO INNOVATE TO REDUCE MANPOWER ON SITE AND SPEED UP PROJECT DELIVERY TIMES AT THE SAME TIME?



Thanks to our webinar sponsors the National Federation of Demolition Contractors, Applied Science International, McCloskey International and Yantai Eddie.

FRANCISCO: We started to compile answers at the end of February to have our industry report ready for June. But at the end of March we stopped the survey. We have already had feedback from many members who were trying to reduce the workforce. When there is no clear future everything stops.

IF I CAN BRING MARTIN IN, YOU MANUFACTURE REMOTE CONTROLLED DEMOLITION MACHINES FOR AN INDUSTRY ALREADY SUFFERING A SKILLS SHORTAGE. HOW DO YOU PUT THAT OPPORTUNITY AGAINST THE DAMAGE CAUSED BY THE PANDEMIC?

MARTIN: In the short term the pandemic hits everybody. In the longer term I believe that this will be a factor that will accelerate a trend towards mechanisation and remote operation. That's already ongoing but I think it will increase because some of the cost of having a lot of people on the work site is that you have to figure out ways of keeping the social distancing – and will continue for a while – and I think you can replace some of them by mechanisation and have fewer people on a site.

DAVID: A lot of our demolition is done remotely by machines anyway. What has been difficult has been adapting the methodology for the people on the work face who are driving the piles, having to unhook the chains and the welding and where there's a scurry of work activity going on in a very small area, the same as putting façade retention systems up. But other than that, everybody is using remote control excavators and this has not been Covid-driven, it's driven by health and safety, governance and all the good work that the manufacturers are doing.

MARTIN: People look at the overall construction sector and the demolition part of it is already one of the most mechanised businesses. There is no reason to believe that trend would shift.

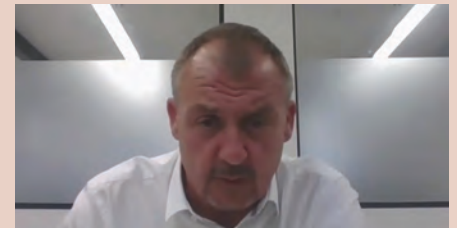
ONE FINAL QUESTION TO EVERYBODY. WHAT IS THE MOST IMPORTANT SINGLE, POSITIVE AND SHORT MESSAGE FOR YOUR PARTICULAR SECTOR?

MARTIN: Markets will come back. This is not the end of the economy, it will come back, it will take some time. For companies who are strong enough to make it through the rough times I think the upside in the demolition industry will be good because Coronavirus will

The Panel



FRANCISCO COBO (President, European Demolition Association)



DAVID DARSEY (Managing director, Demolition Division, Erith Group)



MARTIN KRUPICKA (President and CEO, Brokk Group)



Moderator:
STEVE DUCKER, Editor, D&Ri

change society. You will have new investments in infrastructure, you will have changes of use in a lot of localities, you might see retail changed to something else, you might see office to real estate. All these changes are going to create work.

DAVID: I agree with the sentiment. From a positive point of view, paramount is health, safety and well being of people who work for us and people who we come in contact with, and our families, but we are all in it together, as our government says. Good times will return.

FRANCISCO: The industry is more united than ever, associations have had a clear role, be that the NFDC or one of the national associations. This pandemic is not gone, it can come at any time and by staying together we will be stronger.

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Capturing the mood of an industry

In May 2020, the European Demolition Association (EDA) launched a survey into the impact of Covid-19 on its member companies across the continent. The report summarising those findings is now available – and with almost two-thirds of demolition projects across Europe needing to be rescheduled because of the virus, it is not an easy read.

Since March, the world has had an unprecedented experience. Covid-19 has hit life and industry in every single country.

The European Demolition Association (EDA) has been monitoring the situation from the beginning, appealing for safety and carrying out information and research initiatives in the industry.

The EDA board has been meeting regularly to follow up the situation and support the industry, exchanging best practices and valuable information for the members.

When the pandemic hit Europe, the EDA published a public statement under the motto “Safety First”, addressed to public authorities, customers, stakeholders and the construction industry, including the activities of demolition, decontamination and recycling.

Despite the different response to this pandemic in Europe, the EDA and its national associations encouraged the construction industry to follow all the recommendations and implement the protective measures proposed by health organisations and public authorities, to protect the health of the workers

and their families and to prevent the spread of the disease.

Furthermore, the EDA the published updated information online from national and international demolition associations, European entities and other associations linked to the construction sector.

Within this context, the association has launched a specific report to try to understand a little better the future that awaits us and to discover the impact of Covid-19 on demolition companies.

DIFFERENT SCENARIOS

For this purpose, a specific report to analyse the effects of the pandemic was prepared through the responses of a survey made with the participation of companies from 18 European countries, from May 6 to 15.

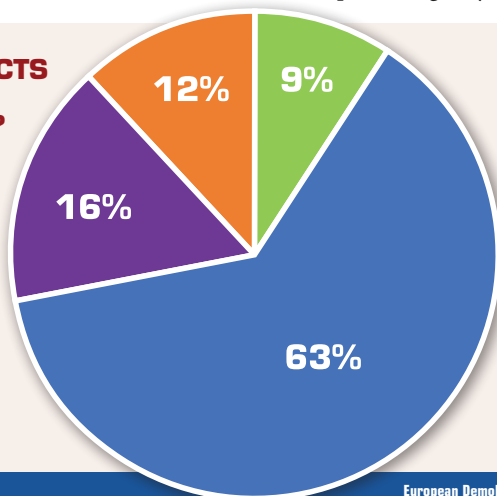
The results showed that the impact and the scenario was very different in every European country, depending on the government, the evolution of the pandemic and the individual resolution of each company.

In general, 63% projects have had to be rescheduled in Europe, leaving only 9% of

HOW HAVE THE PROJECTS PLANNED FOR THIS YEAR BEEN AFFECTED?

EUROPE

- They have been rescheduled but remain in force
- They have been cancelled between 5% and 20%
- More than 20% of the projects have been cancelled
- They have not been affected at all



European Demolition Industry
Report about the impact of COVID-19

The report is available free of charge from the European Demolition Association website

National trends

Cancellations of projects scheduled for this year, although not wholesale, are significant, with 16% of respondents reporting that between 5% and 20% of their projects have been cut, and a further 12% with more than a fifth of their 2020 projects cancelled.

Of Europe's major economies, it looks like Spain and France will be worst hit by cancellations. Almost half of French and 38% of Italian contractors reported projects being cut this year.

Ongoing projects have been significantly impacted, with almost a third reported closed sites and just 56% reported that their sites were open. There is significant geographical variation, however, with 93% of Swedish contracts reporting that their sites were open, contrasting with 53% open in the UK and 50% in Germany.

More encouraging is the finding that 74% of French contractors said their sites were open, while 69% of Italian contractors also reported open sites.

More than a third of respondents have made redundancies due to the pandemic, with a further 27% making temporary job cuts. Only a third of contractors had made no changes to their workforces.



European demolition has had to face some tough questions in recent weeks

planned activity intact, but with differences between countries.

For example, 56% of the projects have not been affected at all in Denmark, but Russia is the country where most projects have been cancelled.

Although the demolition industry has temporarily stopped its activity for some weeks (53%), there some countries that suffered very little impact on the current operations, such as the Netherlands, Finland, Denmark and Sweden.

Staffing reductions differ according to the economic incentives implemented by each national authority.

While the Netherlands, Denmark and Italy are the countries least hit by the layoff, other countries as Germany, Sweden and Serbia are having to reduce their staff because of the crisis.

The full report, with the graphics information at European level and country by country, is available online, free of charge, from www.europeandemolition.org/industryreport

'We have very little essential work on'

Earlier this year, South African contractor Jet Demolition executed a prestigious project in India as its international successes continued. Now it is trying to come to terms with operating a business in the aftermath of the country effectively closing down.

Few stories illustrate the impact of Covid-19 on demolition more starkly than the experience of South African contractor Jet Demolition.

At the start of the year the company was flying, having worked in a dozen countries across the African continent backed up by a range of expertise that had seen it win World Demolition Awards in three different categories in as many years.

By April, like the rest of the country, it was locked down for weeks at a time. Even now, with the most extreme of those restrictions lifted, its work is limited to what managing director Joe Brinkmann calls "a couple of pieces of tidying up".

What is worse, any meaningful decisions to reverse that state could be 18 months away – with the worst-case scenario suggesting that some projects could be put off for the best part of three years.

In an interview in the digital issue of this

Jet Demolition managing director Joe Brinkmann said the company faces long delays in new projects starting up. The full interview is in the digital issue of D&Ri



Holy Faith H20, one of three high-rise apartments in Kerala, India, that Jet Demolition imploded during January

month's D&Ri, Joe Brinkmann details the havoc that Coronavirus has wreaked.

"The virus was picked up here in early March," he says.

"And by the third week of March the government instituted a general hard lockdown, which stayed in effect for five weeks. During that period everyone was confined to their house.

"They were only allowed out to get food, to do shopping, and to visit the doctor if needed.

"Since June 1, some businesses have been able to start up again, but the problem for us is that our customers are mainly in the industrial space. Everyone got a heck of a shock and now the outlook of those companies is to conserve cash. We have very little essential work going on, we are very much in idling mode."

To emphasise the contrast between now and the start of the year even further, it is not just business in Africa that has been affected.

In January, the company successfully completed a three-building implosion in the Maradu region of Kochi in Kerala, India.

The three high-rise apartment buildings were the 20-storey Holy Faith H20, the 18-storey Jains Coral Cove, and the 16-storey Golden Kayaloram. The former was imploded successfully on Saturday 11 January, the others a day later. All three were located within 1.5 km (just under one mile) of each other.

A successful business relationship established with Edifice Engineering of Mumbai during 2019 resulted in Jet Demolition being recommended, and tendering successfully, for this flagship project. The major concern of the Indian authorities was the safety of the public in this high-density area and surrounding properties, the closest being a school only 6 m (20 ft) away from Golden Kayaloram.

"Our trump card was our well-proven methodology and extensive experience in Africa and Indonesia," said Joe at the time of

the implosion. The answer to protecting the school was to effectively split the 16-storey building into two and collapse it in two directions.

Another major challenge was the fast-track nature of the project.

Because an urgent demolition order for the three buildings had been issued by the Supreme Court of India for violating building regulations, Jet Demolition had only two and a half months from inception to completion. The fast-track project saw the team work 12 to 16 hours a day,

Demolition itself had a 12-person team on-site to carry out the design, engineering management, and oversight of all operations. The Mumbai contractor has also been tasked to remove all the rubble following the successful implosions.

With safety being paramount during the implosions, five layers of wire mesh were placed around the columns where the explosives were fixed, followed by a five-layer geotextile cover acting as source protection to contain the rubble. Secondary protection included hanging perimeter curtains on the façades of surrounding buildings to contain the dust that was generated.

A total of 600 kg of (1,322 lb) cartridge explosives was used, in addition to 31,000 m (101,700 ft) of detonating cord and 5,300 blast holes. Due to the tight timeframe, diamond-drill coring was not feasible. Instead, electric percussion drills were used for drilling charge holes, and was only carried out on certain sections such as the lift-shaft walls.

"Everything went very much according to plan," said Joe.


"A project of this complexity, within this timeframe and to this level of detail would not have been possible without the dedication, co-operation, and support from all stakeholders. Local authorities were elated with the result."



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Calm before the storm

This year's listing of global contractors by turnover sees the net worth of the top 100 remaining steady – but the big post-Coronavirus shake-up lies ahead.



Brandenburg Industrial Service Company's projects included a drill rig deconstruction north of the Arctic Circle



dsri 100

This year's **dsri100** overview starts with two huge ironies. The first becomes apparent when reading the introduction written a year ago – which congratulated the industry on its performance a decade on from “arguably the worst financial crisis in a lifetime”. At that stage, the idea of a global pandemic that would close demolition sites for months at a time and in the process dwarf the 2008 economic recession into insignificance was inconceivable. The second is that – against

this Coronavirus-dominated background of social distancing, remote working and a near-global lockdown at a time when at least half the planet should have been enjoying the long days and summery conditions under which demolition projects can thrive – the results declared show the least movement for several years. An increase of US\$7 million year on year on a global revenue stream of \$6.4 billion registers at barely 0.1%. With Covid-19 set to bite further during the third and fourth quarters of this year

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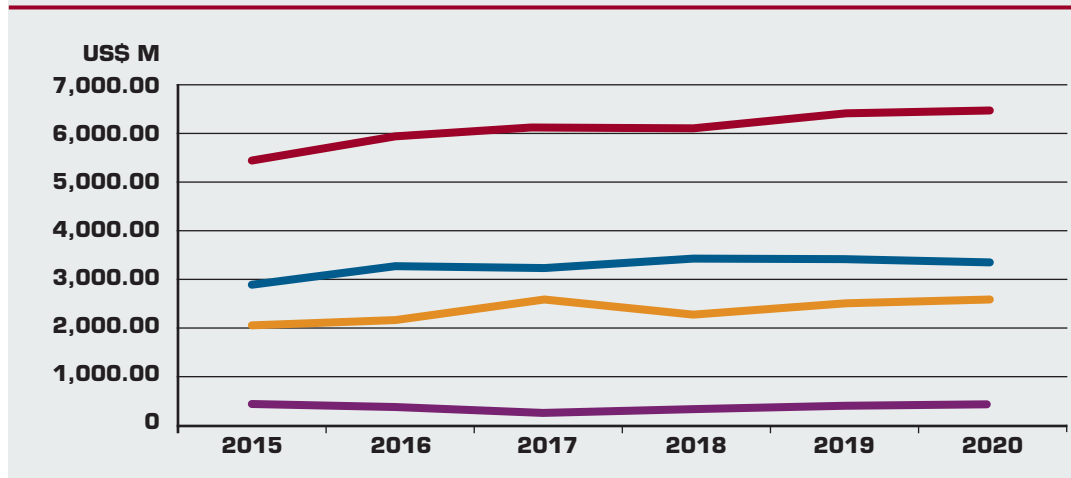
dsri 100 THE WORLD'S LARGEST DEMOLITION CONTRACTORS

POSITION	20	(19)	COMPANY NAME	LOCATION	COUNTRY	TURNOVER (US\$ M) 2018	TURNOVER (US\$ M) 2019
1	1	1	North Star	New York	UNITED STATES	492.64	573.20
2	2	2	Keltbray	Esher	UNITED KINGDOM	EST 420.00	EST 360.00
3	3	3	Brandenburg Industrial Service Co	Chicago	UNITED STATES	222.00	271.00
4	4	4	Erith Contractors	Erith	UNITED KINGDOM	207.05	268.28
5	13	5	Hagedorn Unternehmensgruppe	Gütersloh	GERMANY	125.19	167.24
6	5	6	DH Griffin Wrecking Co	Greensboro	UNITED STATES	170.93	155.00
7	9	7	McGee Group	Wembley	UNITED KINGDOM	143.72	153.97
8	7	8	Penhall	Anaheim	UNITED STATES	EST 150.00	EST 150.00
9	8	9	Freimuth Abbruch und Recycling	Bülkau	GERMANY	EST 148.59	EST 145.00
10	10	10	AF Gruppen	Oslo	NORWAY	136.11	132.47
11	11	11	Wanty SA	Binche	BELGIUM	135.72	EST 130.00
12	12	12	Delete Group	Helsinki	FINLAND	126.59	120.46
13	6	13	Beelen Sloopwerken	Harderwijk	NETHERLANDS	167.35	EST 120.00
14	19	14	Max Wild	Berkheim	GERMANY	92.43	118.00
15	14	15	Cardem	Bischheim	FRANCE	123.33	110.74
16	16	16	Manafort Brothers	Plainville	UNITED STATES	100.00	EST 99.00



dsri 100 YEAR ON YEAR

	2014	2015	2016	2017	2018	2019
dsri100	5,459.27	5,875.64	6,150.76	6,120.63	6,410.23	6,417.35
Europe	2,906.32	3,319.45	3,264.38	3,422.41	3,398.59	3,329.49
North America	2,138.68	2,186.86	2,563.44	2,322.40	2,622.44	2,694.71
Rest of World	414.27	369.33	322.94	375.82	389.20	393.15



POSITION	COMPANY NAME	LOCATION	COUNTRY	TURNOVER (US\$ M) 2018	TURNOVER (US\$ M) 2019
20 ⁽¹⁹⁾					
17 ¹⁸ ⬆️	Bierlein Companies	Midland	UNITED STATES	92.45	90.65
18 ¹⁷ ⬆️	Select Demo Services	Salem	UNITED STATES	94.00	90.00
19 ²⁴ ⬆️	McMahon Services	Dry Creek	AUSTRALIA	73.94	88.80
20 ²³ ⬆️	Envirocon	Boston	UNITED STATES	80.00	^{EST} 82.00
21 ¹⁵ ⬆️	Delsan AIM	Montréal	CANADA	101.05	80.47
22 ²⁰ ⬆️	Ferma Corporation	Mountain View	UNITED STATES	91.00	^{EST} 74.00
23 ²¹ ⬆️	Liberty Industrial	Glebe	AUSTRALIA	86.19	71.56
24 ²² ⬆️	Brown and Mason	Dartford	UNITED KINGDOM	85.15	71.07
25 ⁵² ⬆️	Murray Demolition	Etobicoke	CANADA	^{EST} 40.00	^{EST} 70.00
26 ³⁹ ⬆️	Independence Excavating	Independence	UNITED STATES	^{EST} 47.00	^{EST} 69.60
27 ³⁰ ⬆️	Ferraro Group	Neunkirchen	GERMANY	54.99	68.90
28 ³⁴ ⬆️	Deconstruct UK	London	UNITED KINGDOM	51.89	68.53



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ALFORD
EXPLOSIVE DEMOLITION

POSITION		COMPANY NAME	LOCATION	COUNTRY	TURNOVER	TURNOVER
20	(19)				(US\$ M)	(US\$ M)
					2018	2019
29	29	Priestly Demolition	King, Ontario	CANADA	60.56	EST 62.00
30	26	MCM Management Corporation	Bloomfield Hills	UNITED STATES	61.00	EST 61.00
31	28	Raz-Max	St Petersburg	RUSSIA	60.60	EST 59.90
32	41	PP O'Connor	Manchester	UNITED KINGDOM	44.40	57.39
33	=32	Veit	Rogers	UNITED STATES	52.90	56.70
34	51	Thompsons of Prudhoe	Prudhoe	UNITED KINGDOM	40.38	56.34
35	37	DSM Demolition	Birmingham	UNITED KINGDOM	49.19	56.29
36	25	Scudder Demolition	London	UNITED KINGDOM	65.79	53.90
37	31	Cantillon	Watford	UNITED KINGDOM	52.98	52.46
38	60	John F Hunt	Grays	UNITED KINGDOM	36.47	50.16
39	47	R Collard	Hook	UNITED KINGDOM	42.08	48.48
40	38	Despe	Torre de Roveri	ITALY	49.14	46.33
41	44	Squibb Group	Stanford le Hope	UNITED KINGDOM	42.19	45.83
42	=74	Interior Specialists Inc	White Marsh	UNITED STATES	28.00	EST 45.00
=43	=52	ARC Abatement	Waco	UNITED STATES	40.00	44.00
=43	59	Takayama Kogyo	Tokyo	JAPAN	37.00	44.00

– and probably deep into 2021 as well – we will be looking at a very different set of figures in 12 months’ time.

What would the industry give for a similarly static **d&ri100** graph then?

POSITIONS 1 TO 10

As in 2019, the top 10 was almost the same as a year earlier, with 90% of the previous list making a return visit. The exception was Germany’s Hagedorn Unternehmensgruppe, up from 13th position after increasing its turnover by a third due to projects as diverse as demolishing the Knepper Power Station near Dortmund and dismantling Frankfurt’s US military barracks. As well as Hagedorn, American firm Brandenburg Industrial Service Company and British contractor Erith also recorded handsome increases. Erith’s base close to London means it is often considered for major projects in the United Kingdom’s capital,

but a major collaborative project to demolish the turbine hall at Hinkley Point A nuclear power station in the west of England was also notable. Brandenburg, which says its fleet of heavy equipment is valued at over \$150 million, showed its versatility by deconstructing a drill rig and its support system around 400 km (250 miles) north of the Arctic Circle.

None of this would have been enough to halt North Star even if the perennial list leader had



One of many projects in a successful year for Deconstruct UK was this one at Morley House, London

TOP 20 COMPANIES IN NORTH AMERICA

POSITION		COMPANY NAME	COUNTRY	TURNOVER
20	(19)			(US\$ M)
				2019
1	1	North Star	UNITED STATES	573.20
2	2	Brandenburg Industrial Service Co	UNITED STATES	271.00
3	3	DH Griffin Wrecking Co	UNITED STATES	155.00
4	4	Penhall	UNITED STATES	EST 150.00
5	6	Manafort Brothers	UNITED STATES	EST 99.00
6	8	Bierlein Companies	UNITED STATES	90.65
7	7	Select Demo Services	UNITED STATES	90.00
8	10	Envirocon	UNITED STATES	EST 82.00
9	5	Delsan AIM	CANADA	80.47
10	9	Ferma Corporation	UNITED STATES	EST 74.00
11	NEW	Murray Demolition	CANADA	EST 70.00
12	15	Independence Excavating	UNITED STATES	EST 69.60
13	12	Priestly Demolition	CANADA	EST 62.00
14	11	MCM Management Corporation	UNITED STATES	EST 61.00
15	13	Veit	UNITED STATES	56.70
16	NEW	Interior Specialists Inc	UNITED STATES	EST 45.00
17	20	ARC Abatement	UNITED STATES	44.00
18	14	Adamo Group	UNITED STATES	42.00
19	19	Precision Demolition	UNITED STATES	EST 41.00
20	17	North American Dismantling Corp	UNITED STATES	40.00
				2196.62



Erith Contractors demolished the turbine hall at Hinkley Point A power station in the United Kingdom

POSITION				TURNOVER (US\$ M)	TURNOVER (US\$ M)	
20	⁽¹⁹⁾	COMPANY NAME	LOCATION	COUNTRY	2018	2019
45	58	F&R Industriedemontage und Abbruch	Neukirchen	GERMANY	37.84	43.69
46	56	Moß Abbruch Erdbau Recycling	Lingen	GERMANY	38.96	43.56
47	48	Avenir Deconstruction	Artigues	FRANCE	41.85	EST 43.00
48	35	Adamo Group	Detroit	UNITED STATES	50.60	42.00
49	50	Precision Demolition	Lewisville	UNITED STATES	41.00	EST 41.00
50	42	North American Dismantling Corp	Lapeer	UNITED STATES	44.20	40.00
51	57	G Tscherning	Hedehusene	DENMARK	38.61	EST 39.00
52	62	MGL Demolition	Durham	UNITED KINGDOM	34.75	37.60
53	63	Matsuda City Development	Fukuoka	JAPAN	34.00	37.00
54	96	Dem-Master	Bathgate	UNITED KINGDOM	21.54	36.23

followed the prevailing trend of this year's **d&ri100** and stood still. As it was, the US company increased its revenue by more than \$80 million.

In the process, it was responsible for around half the combined increase in value across the top 10 companies relative to their 2018 turnover figure.

Geographically, Europe provided six of the top 10, but only just over half of its total revenue, illustrating the power of America's big four.

POSITIONS 11 TO 20

For the second tier, the split becomes more even, with five European companies and four from North America. Completing the group was the list's first Australian entry, McMahon Services, which – appropriately enough for a **d&ri100** based on turnover achieved during 2019 – occupied 19th position.

McMahon increased revenue by 20% during the year after a range of fleet investment

TOP 20 COMPANIES IN EUROPE

POSITION				TURNOVER (US\$ M)
20	⁽¹⁹⁾	COMPANY NAME	COUNTRY	2019
1	1	Keltbray	UNITED KINGDOM	EST 360.00
2	2	Erith Contractors	UNITED KINGDOM	268.28
3	9	Hagedorn Unternehmensgruppe	GERMANY	167.24
4	5	McGee Group	UNITED KINGDOM	EST 153.97
5	4	Freimuth Abbruch und Recycling	GERMANY	EST 145.00
6	6	AF Gruppen	NORWAY	132.47
7	7	Wanty SA	BELGIUM	EST 130.00
8	8	Delete Group	FINLAND	120.46
9	3	Beelen Sloopwerken	NETHERLANDS	EST 120.00
10	11	Max Wild	GERMANY	118.00
11	10	Cardem	FRANCE	110.74
12	12	Brown and Mason	UNITED KINGDOM	71.07
13	16	Ferraro Group	GERMANY	68.90
14	18	Deconstruct UK	UNITED KINGDOM	68.53
15	15	Raz-Max	RUSSIA	EST 59.90
16	NEW	PP O'Connor	UNITED KINGDOM	57.39
17	NEW	Thompsons of Prudhoe	UNITED KINGDOM	56.34
18	20	DSM Demolition	UNITED KINGDOM	56.29
19	13	Scudder Demolition	UNITED KINGDOM	53.90
20	17	Cantillon	UNITED KINGDOM	52.46
				2370.94

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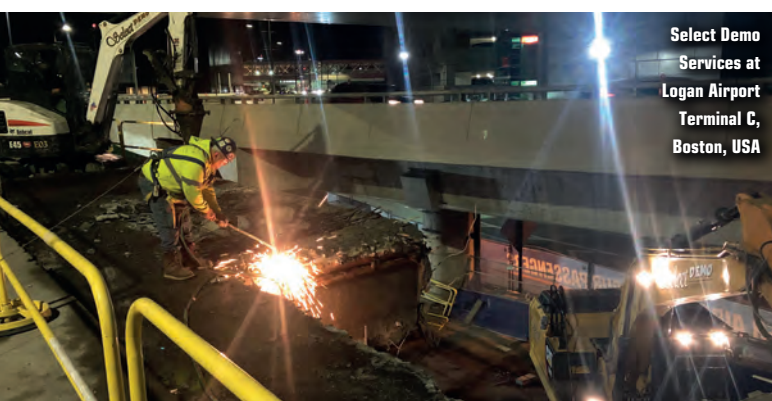


YOU CRUSHED IT!

CONGRATULATIONS FROM ROTAR ON BEING ONE OF **THE TOP 100** DEMOLITION COMPANIES IN THE WORLD.



POSITION	COMPANY NAME	LOCATION	COUNTRY	TURNOVER (US\$ M) 2018	TURNOVER (US\$ M) 2019
55 ⁶⁵ ⬇️	Central Environmental Inc	Anchorage	UNITED STATES	32.80	35.90
56 ⁵⁵ ⬆️	Nasdi	Woburn	UNITED STATES	39.00	^{EST} 35.00
=57 ⁶¹ ⬇️	Marutone Apex	Tokyo	JAPAN	35.00	34.00
=57 ⁶⁴ ⬇️	Prangenberg & Zaum	Dusseldorf	GERMANY	33.93	^{EST} 34.00
59 ⁶⁷ ⬇️	AWR Abbruch	Urmitz	GERMANY	31.59	33.90
60 ⁷³ ⬇️	O'Rourke Wrecking Company	Cincinnati	UNITED STATES	29.00	33.00
61 ⁴⁶ ⬆️	Occamat	Noyant	FRANCE	42.12	32.77
62 ⁼⁵² ⬆️	Demex	Chicoutimi	CANADA	40.00	31.57
63 ⁷⁹ ⬇️	Pacific Blasting & Demolition	Burnaby	CANADA	26.00	31.12
64 ⁴⁵ ⬆️	Hughes and Salvidge	Portsmouth	UNITED KINGDOM	42.16	30.32
65 ⁶⁶ ⬇️	DDM	De Meern	NETHERLANDS	32.63	29.98
66 ⁸¹ ⬇️	John Stacey & Sons	Tadley	UNITED KINGDOM	25.63	29.25



with Kobelco, Powerscreen, Genesis and Volvo Construction Equipment. Projects ranged from deconstructing and scapping quay and gantry cranes at the Port of Singapore Authority's City Terminals to the demolition and rehabilitation of the Kwinana Power Station in Western Australia.

The other entrant into the top 20 was Envirocon of the USA, while the biggest mover within the top 20 from 2018 was Max

Wild of Germany. At just under \$1.2 billion in combined revenue, the second group of companies was around half the size of the top 10.

POSITIONS 21 TO 50

From just outside the top 20 to halfway, the revenue literally halves; from around \$80 million in 21st to \$40 million in 50th. In 2018 the equivalent positions earned \$91 million and \$41 million, respectively.

The section was headed by a group of solid North American and Australian businesses.

Some of the larger increases came further down, with Deconstruct UK posting a 30%-plus rise in revenue from what it described as a series of technically challenging urban demolition projects across central London, including Regent Street, Piccadilly and Smithfield Market.

By contrast, Thompsons of Prudhoe – based in Durham in the north east of England – could hardly have been further from central London, but it too had a good year with a percentage revenue increase closer to 40%.

Sitting between the two,

TOP 10 PERCENTAGE REVENUE INCREASE

POSITION	COMPANY NAME	COUNTRY	PERCENTAGE INCREASE
1	Dem-Master	UNITED KINGDOM	68.20
2	Thompsons of Prudhoe	UNITED KINGDOM	39.52
3	John F Hunt	UNITED KINGDOM	37.54
4	Hagedorn Unternehmensgruppe	GERMANY	33.59
5	Deconstruct UK	UNITED KINGDOM	32.07
6	PP O'Connor	UNITED KINGDOM	29.26
7	Max Wild	GERMANY	27.66
8	Ferraro Group	GERMANY	25.30
9	Brandenburg Industrial Service Co	UNITED STATES	22.07
10	McMahon Services	AUSTRALIA	20.10

TOP 10 INCREASE IN TURNOVER US\$M

POSITION	COMPANY NAME	COUNTRY	TURNOVER INCREASE (US\$ M)
1	North Star	UNITED STATES	80.56
2	Erith Contractors	UNITED KINGDOM	61.23
3	Brandenburg Industrial Service Co	UNITED STATES	49.00
4	Hagedorn Unternehmensgruppe	GERMANY	42.05
5	Max Wild	GERMANY	25.57
6	Deconstruct UK	UNITED KINGDOM	16.64
7	Thompsons of Prudhoe	UNITED KINGDOM	15.96
8	Dem-Master	UNITED KINGDOM	14.69
9	Ferraro Group	GERMANY	13.91
10	John F Hunt	UNITED KINGDOM	13.69

Excludes new entries and estimated to-

“ Geographically, Europe provided six of the top 10, but only just over half of its total revenue, illustrating the power of America's big four ”

POSITION	COMPANY NAME	LOCATION	COUNTRY	TURNOVER (US\$ M) 2018	TURNOVER (US\$ M) 2019
67 NEW	City Circle	Kew East	AUSTRALIA		29.00
=68 ⁷² 🟡	JH Laarakkers	Sambeek	NETHERLANDS	29.25	^{EST} 28.00
=68 =32 🟡	Nabekai Corporation	Tokyo	JAPAN	52.00	28.00
70 ⁷⁰ 🟡	AR Demolition	Nuneaton	UNITED KINGDOM	^{EST} 30.00	^{EST} 27.00
71 ⁹⁰ 🟡	Plannerer	Pullenreuth	GERMANY	23.90	26.90
72 NEW	City Demolition	Birmingham	UNITED KINGDOM		25.66
73 =82 🟡	American Wrecking	South El Monte	UNITED STATES	25.00	25.50
74 ⁶⁹ 🟡	Syd Bishop	Orpington	UNITED KINGDOM	30.03	25.49
75 ⁸⁰ 🟡	Wooldridge Ecotec	Bagshot	UNITED KINGDOM	25.74	25.17
=76 ⁷⁸ 🟡	Cawarden Group	Derby	UNITED KINGDOM	26.46	^{EST} 25.00
=76 =74 🟡	Concrete Cutting and Breaking	Grand Rapids	UNITED STATES	28.00	^{EST} 25.00
=76 =82 🟡	Homrich Wrecking	Carleton	UNITED STATES	25.00	^{EST} 25.00
=76 =82 🟡	Kroeker Inc	Fresno	UNITED STATES	25.00	^{EST} 25.00
=76 =82 🟡	Sabre Demolition	Warners	UNITED STATES	25.00	25.00
81 ⁸⁹ 🟡	American Demolition Corporation	Elgin	UNITED STATES	24.00	24.00
82 ⁷¹ 🟡	Boverhoff	Heerde	NETHERLANDS	29.51	^{EST} 23.10
=83 NEW	Bordeaux Demolition	Merignac	FRANCE		23.00
=83 ⁹² 🟡	Dickens Quality Demolition	Phoenix	UNITED STATES	23.00	^{EST} 23.00
=83 NEW	Nikau Contractors	Auckland	NEW ZEALAND		23.00
86 ⁷⁶ 🟡	Central Demolition	Bonnybridge	UNITED KINGDOM	27.46	22.28
87 ⁸⁸ 🟡	Ambigroup	Arranho	PORTUGAL	24.42	22.09



US contractor Veit & Co once again occupied a place just outside the top 30 of the **clsr** 100

both in the list and in terms of geography, Manchester's PP O'Connor improved year on year by almost 30% and the south of England was represented by impressive performances from John F Hunt and R Collard.

Honourable mentions in this part of the table to Germany's Ferraro Group, which increased turnover by 25% and F&R Industriedemontage at 15%. Moss Abbruch made it a trio of German businesses with double digit percentage revenue increases.

>20

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Extra information

Many of the companies featured in the **dsri 100** have supplied videos and/or photographs of projects they have been involved in. To see these, please visit www.khl.com

Currency conversion

Exchange rates used to convert domestic currencies to US dollars are from a rolling five-year average between 2015 and 2019.

Sourcing the data

D&Ri invites and welcomes all demolition contractors worldwide to supply turnover data for the **dsri 100** and the majority of the figures quoted are sourced by this method. Others are made up of reasonable estimates derived from company or financial websites or other online coverage of the demolition industry.

If you are not included

To receive an entry form for the **dsri 100** 2021, please contact steve.ducker@khl.com



O'Rourke Wrecking Company climbed 13 places to 60th during 2019

Several companies outside Europe had satisfactory years, including US companies ARC Abatement (up 10%) and Veit (7%). Japan's Takayama Kogyo fell just short of 20% year on year growth.

Altogether positions 21 to 50 contributed \$1.67 billion of revenue, just over a quarter of the **dsri 100** total.

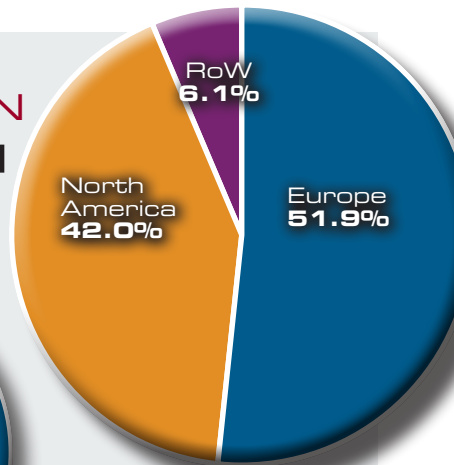
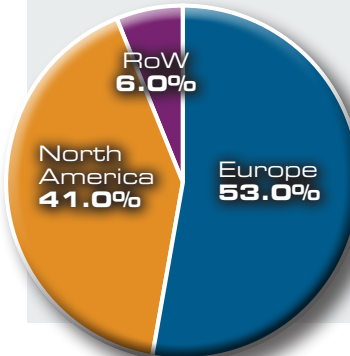
POSITIONS 51 TO 75

In a normal year, as opposed to one ravaged by a global pandemic, this part of the list is worth studying to see which companies might make it into the top 50 a year later.

Certainly, the trends at the top end of the bottom half, viewed in isolation, are encouraging.

REGIONAL BREAKDOWN

2020
Total Revenue
US\$M 6,417.35



2019
Total Revenue
US\$M 6,410.23

Eight of the 10 companies from position 51 downwards grew their revenue in the lifetime of the list, by amounts ranging from less than 1% to the 68% by Scottish contractor Dem-Master, which was the largest percentage increase of any company in the latest table.

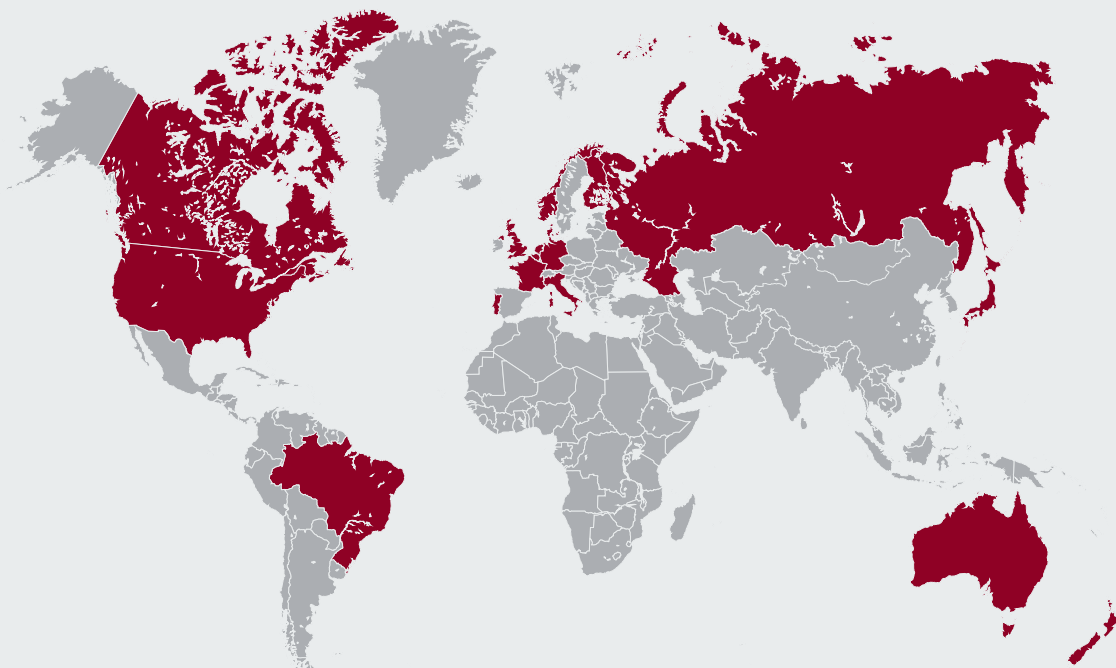
Further down the list there were significant positive changes for America's O'Rourke Wrecking Company and Pacific Blasting & Demolition, as well as Germany's Plannerer – which based much of its progress of bridge demolition – while the three-quarter mark of the full list brought forward the first new entry, City Circle of Australia.

POSITIONS 76 TO 100

In the lower reaches, the situation becomes more competitive, with just \$8 million separating 25



THE GLOBAL SPREAD



Australia	3
Belgium	1
Brazil	1
Canada	5
Denmark	1
Finland	1
France	4
Germany	9
Italy	1
Japan	5
Netherlands	4
New Zealand	1
Norway	1
Portugal	1
Russia	1
United Kingdom	26
United States	35

POSITION	COMPANY NAME	LOCATION	COUNTRY	TURNOVER (US\$ M) 2018	TURNOVER (US\$ M) 2019
=88 ⁼⁹³	Cherry Companies	Houston	UNITED STATES	22.00	22.00
=88 ⁼⁹³	National Wrecking Company	Chicago	UNITED STATES	22.00	^{EST} 22.00
90 ⁹¹	KDC Contractors	Manchester	UNITED KINGDOM	23.75	21.77
91 ⁹⁸	Pece of Mind	Orlando	UNITED STATES	21.00	^{EST} 21.00
92 ^{NEW}	Euro Demolition	Uttoxeter	UNITED KINGDOM		20.70
=93 ^{NEW}	Berg Corporation	Baltimore	UNITED STATES		20.00
=93 ⁴⁰	Remedial Construction Services	Houston	UNITED STATES	46.50	^{EST} 20.00
=95 ^{NEW}	Grant Mackay	Woods Cross	UNITED STATES		19.00
=95 ^{NEW}	Uchimura Kogyo	Tokyo	JAPAN		^{EST} 19.00
97 ⁴⁹	Fabio Bruno Construcoes	Rio de Janeiro	BRAZIL	41.01	18.79
98 ^{NEW}	Armac Demolition	Solihull	UNITED KINGDOM		18.29
99 ^{NEW}	Robinette Demolition	Villa Park	UNITED STATES		^{EST} 18.00
100 ^{NEW}	Rachel Contracting	St Michael	UNITED STATES		17.00

companies, five of whom shared 76th place with three more unable to be separated in 83rd. Encouragingly, half of the

final 18 companies in the list were new entries, including five of the six between 95th and 100th.

France, Japan and New Zealand were among the countries providing new entrants.

THE REGIONAL TOP TWENTIES

Once again, Europe's top companies achieved a higher combined revenue than their US and Canadian counterparts, though North America closed

the gap by around \$100 million to \$174 million. In the overall **dsri 100**, Europe conceded just over 1% of market share to North America, while the Rest of the World remained almost identical at just over 6%. ■

NEW ENTRIES

POSITION	COMPANY NAME	COUNTRY	TURNOVER (US\$ M) 2019
67	City Circle	AUSTRALIA	29.00
72	City Demolition	UNITED KINGDOM	25.66
83	Bordeaux Demolition	FRANCE	23.00
85	Nikau Contractors	NEW ZEALAND	23.00
92	Euro Demolition	UNITED KINGDOM	20.70
93	Berg Corporation	UNITED STATES	20.00
95	Grant Mackay	UNITED STATES	^{EST} 19.00
96	Uchimura Kogyo	JAPAN	^{EST} 19.00
97	Armac Demolition	UNITED KINGDOM	18.29
99	Robinette Demolition	UNITED STATES	^{EST} 18.00
100	Rachel Contracting	UNITED STATES	17.00



British firm Cawarden takes down a business centre in the English midlands during 2019

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Variety meets versatility

From Ultra High Demolition models to compact machines for indoor projects, the full range of excavator product development has continued in the first part of 2020, often influenced by machines from other areas of the demolition equipment market.

Hundai Construction Equipment recently joined forces with Hyundai Motor Group to develop hydrogen-powered construction equipment.

It signed a Memorandum of Understanding (MOU) regarding the joint development of hydrogen fuel cell construction equipment with Hyundai Motors and Hyundai Mobis at its Mabuk Research Centre in South Korea. Together, the three companies will look to develop medium to large-capacity hydrogen-powered excavators over the next few years.

According to the MOU, Hyundai Motors and Hyundai Mobis will design and manufacture hydrogen fuel cell systems, including power packs, while Hyundai Construction Equipment will design, manufacture, and evaluate the performance of the excavators and forklifts. The target date for mass production and distribution, which also includes forklifts, has been set to 2023.

Unlike conventional diesel engine-

based equipment, hydrogen-based electric construction equipment uses electricity produced through the chemical reactions between hydrogen and oxygen as its power source, meaning no emissions of toxic gases into the air. Given the rapidly rising demand for eco-friendly equipment around the world in recent years, hydrogen-based construction equipment is expected to help Hyundai Construction Equipment compete in the global construction market moving forward.

Hwang Jong-hyun, head of the research and development division for Hyundai Material Handling at Hyundai Construction Equipment, said: "With this latest agreement, we've prepared a foundation upon which we can secure core technology in hydrogen-powered construction equipment.

"Hyundai Construction Equipment will do its very best to meet the challenges that lie ahead as countries around the world attempt to establish global standards in terms of certifying



Cat's 352 UHD Ultra High Demolition excavator, designed for tall structures

performance and legislating relevant laws for the commercialisation of hydrogen-powered construction equipment, and play a leading role in the market moving forward."

SMART MACHINES

For the immediate future, Hyundai Construction Equipment Europe has launched the A-Series HX220AL crawler excavator, one of its first Stage V ready machines with several new services features developed and tested to improve uptime and meet the demand for smart machines.

A mobile demolition machine from Sennebogen's 825 E-Series with quick-change system installed on the grab stick is described as combining the qualities of a material handler designed and thoroughly proven to withstand continuous use in scrapyards with the features of a robust and stable demolition excavator.

The company says the machine has the advantage of being moved more quickly and easily for smaller, inner-city projects.

Indoor demolition machine adapts for archeological dig at castle

A new Bobcat E10e battery powered mini-excavator – designed mainly for indoor demolition applications – has been used for its low noise and zero emissions on an archaeological dig, exploring the ruins of a castle in the Czech Republic.

The ruins, near Prague, date from the second half of the 13th century and after archaeologists evaluated the site, the excavator's operator was called in to find the castle's moat and other items that would help determine the size of the original castle.

This involved an in-depth exploration in the garden of one of the buildings adjoining the ruins. The task was to dig a 57 m (187 ft) long main reconnaissance trench and a 16 m (52 ft) long verification trench.

After only a few hours, the E10e uncovered the point where the soil mixed with the original masonry of the castle. As experts from the local museum investigated the site further, they found the E10e had in fact encountered the remains a cellar that could be up to 500 years old. The dig continued by hand while the Bobcat E10e continued along pre-marked lines on another reconnaissance excavation elsewhere on the site.

Although primarily intended for demolition indoors, Bobcat says the excavator is suited to many areas where zero emission and low noise machines are required.

These include construction and refurbishment in city centres, night work or meeting the requirements for work in low-noise locations such as schools, hospitals and shopping centres.



From left: Directors and management of Hyundai Construction Equipment, Hyundai Mobis and Hyundai Motor Company sign the agreement for the joint development of hydrogen fuel cell construction equipment.

PHOTO CREDIT: HCE/HYUNDAI MOBIS/HYUNDAI MOTOR GROUP



Sennebogen's 825-E Series is built for a range of applications

According to Sennebogen, the days when many different construction machines could be seen on demolition sites are a thing of the past.

The company has developed special transport kinematics for the 825 E-Series demolition, where the machine is transported in its entirety without removing the stick or counterweight. Thanks to it being a mobile version, the machine is ready to start in just a couple of minutes as soon as it has been driven off the low loader.

A range of "green efficiency" technologies mean that the company's diesel-powered machines can operate with particularly low emissions, low wear and tear and save energy. EcoMode, automatic idle and automatic stop reduce diesel consumption to a minimum, when handled optimally by up to 25% and the ex-works installed engine speed control systems can help demolition professionals to reduce operating costs sustainably without the need for separate operator training.

Cat's 352 UHD Ultra High Demolition excavator is designed to demolition of tall structures using a range of Cat attachments, including multi-processors, grapples, shears and hydraulic hammers with the retrofit boom.

LOWER-LEVEL DEMOLITION

The UHD front can be switched for a straight or bent (retrofit) boom position for lower-level demolition and earthmoving applications. According to Cat, this switch typically is done in about 15 minutes by two people with no special tool required. The 352 UHD features a hydraulically activated variable-gauge



undercarriage as well as the Cat Active Stability Monitoring system, which continuously informs the operator of work tool position within a safe working range and warns when approaching stability limits.

In the UHD configuration, the machine provides 28 m (91 ft) of vertical height to the work tool attachment pin, and 15.8 m (51 ft) of horizontal reach, when working with a 3,700 kg (8,150 lb) tool. These specifications allow the 352 UHD to demolish structures of eight or nine storeys quickly, with precision and control thanks to the electro-hydraulic control system. The undercarriage gauge is 4,000 mm (156 in) for optimum stability when working, and 3,000 mm (120 in) for transport.

In retrofit straight boom configuration, the 352 UHD uses a 9.1 m (29 ft 9 in) retrofit boom with a choice of 2.9 m (9 ft) or 3.35 m (11 ft) retrofit stick. Equipped with the longer stick and a 3.08 cu m (108 cu ft) bucket, the 352 UHD digs to 6,670 mm (21 ft) and a maximum reach at ground level of 11,880 mm (38 ft).

Hitachi Construction Machinery (Europe) has introduced its next generation Zaxis-7 medium excavators, which it says "puts owners and operators in complete control."

The ZX250-7, ZX300-7 and ZX350-7 Stage V-compliant models feature a redefined design which the manufacturer believes gives owners the opportunity to increase profit and reduce costs, with fuel consumption on the new machines up to 10% less than previous models.

The excavators can be used on a range of projects, as attachments are quickly changed using an enhanced attachment support system on the monitor. Operator preference and job site requirements can also be adjusted to fine tune the machine for optimum productivity.

New features of the cab – which has 20% less vibration than the previous generation include the synchronised motion of the seat and console to reduce operator fatigue, and an adjustable console height with three positions to choose from. Easy operation comes from the ergonomic design of the console and switches. The hi-res anti-glare 20 cm (8 in) screen is also easier to view.

Tested rigorously at dedicated facilities in Japan, Hitachi Zaxis-7 machines have been built to last and maximise uptime by easy maintenance and cleaning features. The two-way disconnect switch makes it possible to shut down power while still enabling the machine to transmit operation data for 72 hours. When the battery is completely disconnected, service or maintenance works can be carried out.

Volvo Construction Equipment has introduced the EC300E Hybrid, now available in North America. The manufacturer says the new hydraulic hybrid takes "free energy" generated by the boom down motion and uses it to reduce fuel consumption.

The powerful and regular boom-down motion charges 20-litre hydraulic accumulators, which then deliver energy to drive hydraulic assist motors that help power the hydraulic pump. There are the same levels of controllability and performance as the standard EC300E, including the ability to work in Eco and Hybrid mode simultaneously. ■



A new Hitachi ZX350-7 Stage V compliant model featuring a redefined design – listen to HCME product manager Wilbert Blom talk about the machine in the digital issue of D&Ri

Contractor finds 'dream' machine after 20 years

A United Kingdom-based contractor has described his new JCB 220X as "the perfect demolition excavator" after 20 years of searching for a model combining size, stability, and breakout force.

Advanced Demolition, which operates from Dorset in the south of England, bought the new JCB 220X for projects across the county, including private residential work in the prestigious Sandbanks area of Poole.

Supplied by dealer Holt JCB, the excavator has also been put to use on commercial applications including the demolition of a factory – completing the entire project from the initial asbestos removal, through to clearing the site.

The reach on the JCB 220X enabled Advanced Demolition to cut out steel uprights, trusses and purlins without disturbing the three external walls at risk of collapse.

"I have worked in demolition for the past 27 years," said owner and director Brian Hanford.

"And I have never truly found an excavator in this size range that has the stability and grunt of the traditional, purpose-built demolition machines that used to be available – until now. It has the perfect combination of size, weight, power, stability and ripping force."

"We have already put 200 hours on the clock and it has been perfect since day one. Fuel consumption is even lower than expected."





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The R934 tackles a large storage tank on site at a Skillings project in the north of England



Multi-tasking at Skillings

When United Kingdom-based business Skillings looked to order four new machines for its nationwide crushing and demolition service, it turned to Liebherr's Colmar operation in France.

Two projects in the north of England were the backdrop as the first machines went straight into operation.

Demolition specialist Skillings Crushing Company is one of the early British customers for Liebherr's new Generation 8 excavators, placing an order for four machines from the factory in Colmar, France. An R 934 with straight demolition boom and an R 945 have already arrived with a pair of R 930s pencilled in for delivery later this year.

The "8" package quickly follows recent delivery of R 926 and R 960 models to the business, which is based in the north west of England and whose nationwide service also include groundworks and enabling after dismantling.

Most of its excavator fleet are Liebherrs.

"We have taken the latest machines from Liebherr because they are simply the best for the job," said David Skillings, while site manager Peter Lees added: "The back-up we get from Liebherr has been very impressive."

"We know things break down but when

you call Liebherr, there's no issues or arguments, you just get a fitter turning up and sorting the problem out. We did have AdBlue issues on some of the earlier Tier 4 machines but Liebherr were honest with us, looked after us and resolved the issues with no complaints."

The R 934G8 with straight boom joined the Liebherr line-up as a replacement for a five-year-old R 936 which had been operated by long-term employee David Marsden who, while impressed by the newcomer, was quick to praise its predecessor.

"It's still early days for the new machine but if it performs as my older one did, I'll be very happy."

Before Covid-19 impacted on the demolition industry, Skillings was operating

two projects near Selby in North Yorkshire. The first is for a long-term client and involves a range of demolition and enabling works on a large processing site.

"We have been undertaking a variety of work on this site, from demolition of redundant parts of the processing plant to developing land so that the client can undertake a large plan of expansion works," Peter Lees explained.

TIMELY ARRIVAL

The arrival on site of the R 934 was timely given that Skillings had reached a point in the contract calling for demolition of a large storage tank that had been craned out from

>26

Fast attachment changeovers from OilQuick hydraulic couplers meant the tank was cut in half in under 15 minutes





The R945 was used to break out the foundations of a former civic centre

the banded area where it had been sitting for a number of years. With the tank drained and cleaned, David tackled the 5 m (16 ft) diameter, 7 m (23 ft) tall structure with a new Fortress 25R rotating shear on the business end of the 38.1 t host machine.

The 7 m straight mono boom coupled to a 2.9 m (9 ft 6 in) dipper allows a potential pin height of almost 11 m (36 ft), making it an ideal configuration where a small, high-reach excavator can operate in a restricted footprint.

The entire excavator fleet is fitted with OilQuick hydraulic couplers for fast attachment changeovers and the combination of excavator and shear saw the tank cut in half in less than 15 minutes. Protected from falling debris by a substantial cage to the front and top of the cab, David then cut each half into smaller sections.

"The R 934 is smaller than the machine it replaced but it easily picked up and manoeuvred the tank and remaining stable when carrying the 2.5 t shear at full reach," said David.

"I'm very pleased with the power of the excavator," he added.

Elsewhere, the largest of the current Generation 8 line up, the R 945, made its presence felt breaking out the foundations of a former civic centre. With an operating weight of up to 47 t and supplied with the heavy-duty LC-V undercarriage (a standard HD version is available) it replaced a similar-sized R 950 from the previous generation.

The huge undercarriage is fitted with double grouser pads and three top rollers with the bottom rollers protected by a set of substantial guards. The LV-V version allows the undercarriage to be expanded from a travelling width of 2.39 m (7 ft) to a working width of 2.89 m (9 ft 6 in) and because the upper structure is more than 120 mm (5 in) higher than the standard version, four large galvanised steps are bolted to the track frames for easier access to cab and upper body.

Both of Skillings' new excavators have four rebar deflectors fitted to the undercarriages to prevent rebar being caught in the pads and dragged up to cause costly damage to the body and components. Those solid additions,

along with substantial upper body side-impact protection, were fabricated by JJ Bullen of Ormskirk in Lancashire, a company held in high esteem by Skillings.

Unlike the smaller R 934, the R 945 carries a standard 6.45 m (21 ft) boom with a 2.6 m (8 ft 6 in) stick and is similarly equipped with an OilQuick coupler. In its fighting weight of 46.8 t, it was used with a 3.5 t Epiroc HB3600 hammer to quickly break up the slab for crushing. Traditionally offering a below-ground demolition service, the Skillings team and its equipment were well prepared for removing and processing large areas of heavily reinforced concrete before moving on to the removal of the large concrete footings.

CAB DESIGN

Both new Generation 8 excavators have the same cab design from previous models. Described as one of the largest on the market,

it has plenty of room fore and aft of the air-suspended and heated seat while large areas of glass mean the operator's outlook is always uncluttered, even with the heavy-duty protection screen in place. A new foldable armrest makes access and exit easier while the latest 178 mm (7 in) touchscreen relays important system information to the operator. Up to 10 settings can be stored, allowing various attachment flows and pressures to be easily recalled as needed.

Generation 8 excavators also get an upgraded LED lighting system to front, rear and sides of the upper structure, to the cab roof and boom, with the two lower upper structure lights protected by grilles. A full auto greasing system is also standard covering all points other than the bucket linkage.

Meeting the latest Stage 5 engine emissions regulations by way of a straightforward DOC (diesel oxidation catalyst) and SCR (selective catalytic reduction) system along with passive regeneration, the two excavators carry the same eight-litre, four-cylinder Liebherr engine, the R 934 pushing out 272 hp while its bigger brother delivers a further 27 hp.

Torque ratings are the same, 1,415 Nm at 1,350 rpm. The hydraulic system is supplied by a pair of 315 l/min variable displacement pumps.

Peter and David agree that the latest excavators are "the nicest" machines they have operated and they are equally in agreement that equipment utilisation is vital for a successful business.

"We know we are going to have issues with any machine," said Peter.

"It all hinges on the way a manufacturer deals with those problems. We make a phone call and the engineer is out. We don't have to chase or shout at people. Dealing with them is easy and that's how it should be." ■



Both the new excavators include a cab design that Liebherr describes as one of the largest on the market

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OVER
70 YEARS
 OF EXPERIENCE



When energy company Engie selected Delta Group to demolish the former Hazelwood power station in Victoria, Australia, the contractor needed to call on all its 30-plus years of experience to meet the technical challenges involved. With Delta having passed the milestone of demolishing the site's eight iconic chimney stacks, project manager **Bartek Kogutowski** talks to *Demolition & Recycling International*.

D&RI: WHAT ATTRACTED YOU TO THE HAZELWOOD PROJECT?

BARTEK: As the world transitions to a clean energy future Delta Group aspires to be at the forefront of generational change and the Hazelwood Mine & Power Station Demolition Project represented a once in a generation project.

It offered us a rare opportunity to combine the experience we have acquired during more than 30 years in high-risk demolition works across Australasia, with a carefully integrated works programme involving our demolition, recycling, environmental, civil construction and heavy plant hire contracting services.

WHAT WERE THE MAJOR TECHNICAL CHALLENGES INVOLVED IN THE PROJECT?

Delta Group faced – and continues to face – several critical technical challenges following contract award in late 2018, including asbestos contaminated materials throughout the plant.

There were also severely compromised concrete chimney stack structures, which meant a one-off explosive demolition event was deemed the safest possible option. We applied engineered cut designs and fell techniques

Once in a generation



to minimise dust resulting from the fells that mirrored detailed wind and weather modelling conducted over 18 months to two years.

Located within 140 m (460 ft) of the fell zone is a critical piece of live infrastructure for the Australian electricity network that represented more than 30% of all electricity to the State of Victoria as well as a vital interconnector for Australia's vast eastern, central and Western electricity grids. Detailed computer-generated analysis of the combined 24,000 t plus stack fells within 140 m of live operational assets was carried out to ensure we did not compromise either the HSCC structure and adjacent switch yard.

WHAT ELSE HAD YOU DONE ON THE SITE BEFORE THE FELLING OF THE STACKS?

We processed and recycling of more than 32,000 t of steel (with up to 100,000 t left to salvage); demolished 24 precipitators of 400 t each; four 15 m (49 ft) transfer houses and four boiler house coal handling rising conveyors.

In addition, the project called for the

removal of more than 20,000 sq m (215,000 sq ft) of asbestos cladding, as well as 7,000 cu m (75,000 sq ft) of asbestos contaminated waste, and the installation of two 500 m (1,640 ft) long dust suppression water lines that were specific to the stack fells.

Other requirements included the construction and management of an onsite asbestos containment cell and the dismantling and demolition of four out of a total of eight steam turbines and the surrounding turbine hall structure.

Finally, we had to deconstruct and demolish the adjacent mine infrastructure, including 11,000 t of steel, 9,000 t of concrete, tripper stackers, slew conveyors and conveyor lines.

HOW BIG A PROBLEM WAS THE ASBESTOS IN THE CHIMNEYS AND HOW DID YOU MAKE SURE THIS WAS HANDLED SAFELY?

Asbestos was and remains a critical project issue that requires significant and ongoing risk reviews, planning and engineering.

According to independent engineering assessments, the volume ratio of bonded non-friable asbestos in each chimney was 0.0065%.

Asbestos in each chimney stack was also inaccessible as it had been poured in-situ of the concrete when they were built in the early 1960s.

While the ratio was considered a very low risk, the seriousness of ensuring this risk relating to exposure to onsite workers and the surrounding community was treated with the utmost importance and was not to be compromised in our planning.

The proximity of the Morwell and Churchill >30



townships and their residents were a stimulus in this planning, which also included what we believe to be one of the world's first deep dive studies into dust plume modelling of such an explosive demolition event.

In the course of 18 to 24 months and stretching back as far as publicly available wind and weather data would allow, ERM Australia undertook a detailed study using Calpuff software to ensure our designs and methods for the fells event did not expose the local community, workers or adjoining business' to any identified risk.

In strict accordance with Australian law an independent occupational hygienist was engaged to ensure our modelling was accurate, using an onsite NATA (National Association of Testing Authorities) Accredited Laboratory for asbestos analysis and a team of 10 highly skilled, qualified and experienced hygienists drawing results from 125 air monitoring stations that were strategically placed around the site.

Our detailed planning, wind and weather modelling combined and custom-built dust suppression achieved a safe and successful outcome.

The project's Independent occupational hygienist, together with local Victoria government regulators confirmed our success by officially declaring that all asbestos monitoring results for the blast event were within the legislated limits.

Almost 50 organisations have been involved with the project to date.

WHERE DOES THE JOB FIT INTO YOUR OVERALL PORTFOLIO, IN TERMS OF SIZE AND DIFFICULTY?

Hazelwood is the largest ever project of its type to be carried out in the southern hemisphere and, as such, represents our largest project we have been involved in so far.

To carry out a project of this size has involved some of our most significant engineering challenges.

Our experience in high risk works and site preparation services allowed us to apply lessons learned from hundreds of past urban and industrial projects.



Before felling the chimneys, Delta undertook a detailed study to ensure there was no identifiable risk to the local community or neighbouring businesses

WHAT IMPACT DID THE CORONAVIRUS PANDEMIC HAVE ON HOW YOU APPROACHED THE PROJECT IN RECENT MONTHS?

Australia, like the rest of the world, continues to deal with the severe impacts of Covid-19.

Our team updated policies and procedures in line with government advice and regulations to protect the health and wellbeing of our people as well as our business.

One of the greatest challenges was ensuring the delivery, workmanship, standards and skillset of our international subcontractors weren't compromised as a result of restraints on international travel.

With this challenge a key driver, our delivery team made the necessary adjustments to the organisational structure, introduced modern communication technology and procured the highest skilled local staff to fill the gaps created by international Covid-19 restrictions and ensured the successful delivery of the works, as planned and proposed.

HOW MANY MAN HOURS HAVE YOU COMMITTED TO THIS? WHAT EQUIPMENT DID YOU USE?

We are fast approaching half a million work hours, with more than 900,000 work hours

forecast for the project overall. A host of specialist equipment continues to be deployed to site – the majority of which is Delta owned and operated, for example:

- excavators – 130 t, 120 t and 70 t long reach, 87 t, 70 t, 65 t, 47 t, 35 t, 20 t and mini.
- dump trucks – 50 t
- water cart
- Bobcats and forklifts
- travel tower – 60 m
- Manitous
- Boom/scissor lifts – 19ft, 130 ft
- gantry cranes – 100t
- crawler cranes – 150t.

WHAT ELSE IS LEFT TO DO ON THE SITE?

While the explosive demolition of the Hazelwood concrete chimney stacks attracted international attention, it was one milestone in the three-year programme and there is still much to do until we successfully deliver the project for Engie.

Particularly, there is up to 100,000 t of steel to process and recycle as well as more than 200,000 t of concrete, which will be crushed and screened onsite using specialist Delta Group mobile plant from our dedicated recycling division.

The works continue on a range of fronts, including the explosive felling and processing of four boiler houses and coal bunker annexes. Each boiler house contains two 1,800 t hanging boilers, is approximately 65 m (213 ft) in height and has a total footprint of approximately 6,000 sq m (64.500 sq ft).

Also there is the explosive felling of four bucket-wheel dredgers up to a weight of approximately 2,000 t; demolition of the remaining four steam turbines and associated turbine hall; structural modification and strengthening works to a three-level critical infrastructure asset which is currently dependent of the turbine hall.

The 30,000 t reinforced concrete coal bunker needs to be demolished, as do all assets in the open cast mine, and we need to safely remove all the remaining asbestos containing materials from the site.

With the chimneys gone, Delta now focuses on a range of further works including processing and recycling up to 200,000 t of concrete





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A complex problem

Two projects at opposite ends of England demonstrate the differing calls on demolition contractor expertise in the decommissioning sector.

The United Kingdom's Littlebrook Power Station, on the south bank of the River Thames next to the Queen Elizabeth II Bridge, was a complex of four oil and coal fired power stations.

'A' Station, the first on the site, started operation in 1939 and was originally powered by coal.

It was later converted to burn oil over coal and this remained the case until it closed in the mid-1970s.

B Station came into operation in 1949-50 and again was originally designed to use coal but was also later converted to burn oil. C Station was similarly designed but converted to burn fuel oil by 1958, until it was replaced by D Station in 1981.

LOCAL INFRASTRUCTURE

D Station station was one of several stations throughout the UK with black-start capability, or the ability to generate without an external power supply, and played a vital role in restoring power supplies to the south east of England in the days following the "hurricane" of October 1987. It was built with three

Thompsons of Prudhoe partners for Port of Blyth expansion

The new decommissioning partnership between Port of Blyth in the north east of England and the demolition specialist Thompsons of Prudhoe has taken another step forward with works to enhance the existing decommissioning facilities underway at the Northumberland port.

Having announced in February that the new collaboration was to combine the considerable onshore decommissioning and waste disposal experience of Thompsons of Prudhoe with the port location and significant offshore experience offered by Port of Blyth, the partners are now pushing ahead with a £1 million (\$1.25 million) investment into improvements that will enhance the UK offshore decommissioning capability.

The enhancements at the open access facility include the construction of over 1 ha (2.47 acres) of heavily reinforced impermeable concrete ground slabs and complex drainage system for surface water catchment and treatment.

Having been awarded an Environment Agency permit in 2018, Port of Blyth has already completed several offshore decommissioning projects but is now able to significantly expand its capacity alongside one of the UK's most trusted demolition and decommissioning contractors.

Strategically located on the United Kingdom's east coast, the facility offers a common-user 2.3 ha (5.68 acre) designated site handling up to 50,000 t of materials per year including NORM (naturally occurring radioactive material) and is well placed to serve all sectors of the North Sea.

John Thompson Snr MBE, chairman of Thompsons of Prudhoe, said: "We are delighted with the construction progress being made, especially during these challenging times. We look forward to supporting the offshore industry with their increasing demand for onshore dismantling and waste disposal services".

The expansion works were expected to be completed by the end of June 2020 with the facility remaining open for business throughout.



Brown and Mason proposed a vertical collapse mechanism for the Littlebrook chimney



660 MW units and had a 215 m (705 ft) tall chimney.

Brown & Mason took on the project to demolish buildings and structures associated with A, B & D Littlebrook power station.

Due to the proximity to the London orbital M25 motorway, a planned programme of events was carried out to avoid disrupting local infrastructure.

The main activities of the project involved the residual decommissioning, hazardous insulating materials removal, dismantling and demolition of the power station with subsequent grading of the ground levels across the site.

The vertical collapse mechanism proposed for the chimney significantly reduced the length of fall, debris spread and reduced the amount of ground vibration created by the whole of the chimney impacting with the ground in one piece.

Part of the contracted works involved the decontamination and clearance of the heavy fuel oil tanks which served the complex.

The heavy fuel oil was delivered to site by tankers mooring at one of the site's two jetties on the River Thames and the fuel was stored in the five 110,000 t tanks for use within the station complex.

Works commenced on site in October 2017 and comprised decontamination and clearance of heavy fuel oil from existing pipework; removal of tin cladding and MMMF (man made mineral fibres) insulation; subsequent demolition of the tanks; breaking out the concrete tank bases and demolition of the fuel oil pumphouse.

The dismantling process produced around 10,000 t of recycled scrap ferrous metal arisings.

To date more than 110,000 t of ferrous and 2,400 t of non-ferrous material have been removed enabling, the project to realise a current demolition recovery index rate of more than 99%.

The half year report

D&Ri rounds up some of the most prominent product launches during the first six months of 2020.

ALLU

Finland-based attachments manufacturer Allu premiered its new range of crusher buckets for the demolition and recycling industries.

The Allu Crusher line comprises three models for 10 to 33 t excavators, one of which was on display at ConExpo in Las Vegas, USA.

The heavy duty attachment “opens like a clam” for easy maintenance and features reversible crushing to reduce jamming and blockages and a pin adjustment that allows operators to change the size of the output material.

The company, which also produces the Transformer line of screener crushers and the Processor range of mixers said the range was designed for hard rock and troublesome demolition materials.

AQUAJET

The Sweden-based hydrodemolition machine manufacturer introduced the Ecosilence 3.0 (pictured below) to reduce noise and allow for a more compact job site, while enhancing environmental stewardship and lowering overall operating costs.

The product features integrated auto start/stop technology that improves fuel consumption, which saves as much as 25 litres of fuel a day for a smaller carbon footprint. According to Aquajet, the re-engineered Ecosilence is more compact, as well, with the entire self-contained system now fitting in a standard, 6.1 m (20 ft) shipping container.

It also produces less noise while in operation, making it suitable for use in urban areas with limited space and strict noise restrictions.



AVANT (UK)

Avant (UK), the English subsidiary of Finnish compact loader manufacturer Avant Tecno, added the most powerful machine to its 8 series range – the Avant 860i Stage V (above). The largest of the Avant loaders, although still compact, it benefits from a greater lifting capacity of 1,900 kg (4,188 lb), a greater reach of 3.5 m (11 ft 6 in), and a turbocharged Kohler KDI 1903 TCR 42 kW (57 hp) diesel engine.

The machine also complies with the latest emissions regulations and boasts many additional features to previous models, including an improved GT cabin with better visibility and usability.

BOBCAT

Compact equipment specialist Bobcat showed its E10e mini excavator for the first time at



The Brokk Atomised Water Mist for dust suppression



this year's Executive Hire Show in the United Kingdom. The machine (pictured above) is suitable for indoor demolition and basement projects as well as other low noise sites such as city centres.

Developed at the Bobcat EMEA (Europe, Middle East and Africa) Innovation Centre in the Czech Republic, the E10e is based on the diesel powered E10, which has sold more than 10,000 in the past 10 years.

BROKK

The Sweden-based leading remote-controlled demolition robot manufacturer Brokk unveiled its new Atomised Water Mist for dust suppression applications.

The company says the new system produces atomised fog that effectively binds airborne dust particles while providing suppression at ground level.

In addition, the mist dissipates, rather than forming puddles, which Brokk said makes for a safer, cleaner job site.

Available for all Brokk remote-controlled demolition robots, the dust suppression offers a solution for combatting harmful silica dust in demolition applications.

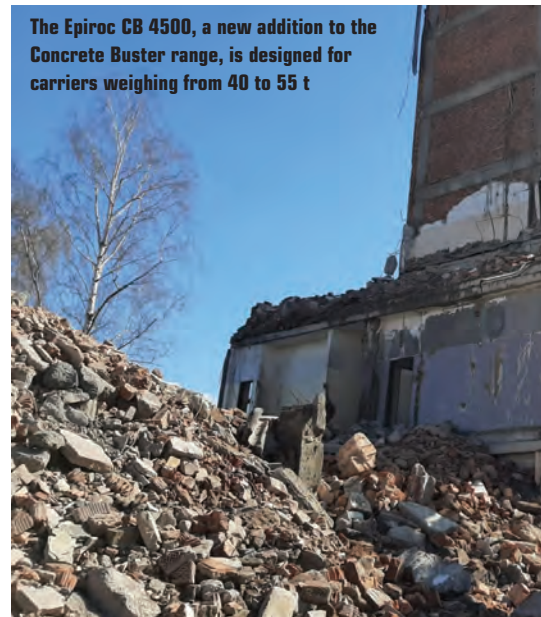
EPIROC

Germany-based attachment specialist Epiroc added the CB 4500 to its popular CB Concrete Buster range.

The new model is designed for carriers in the 40 to 55 t weight class.

Epiroc says that due to their comparatively light weight CB Concrete Busters are effective

The Epiroc CB 4500, a new addition to the Concrete Buster range, is designed for carriers weighing from 40 to 55 t



choices for use with high reach or long front carriers for applications with highly abrasive material and low level of visibility of the product in operation. They are also suitable where noise is an issue and they can be used in residential areas where hydraulic breakers are not permitted.

EVOQUIP

Leading compact crushing and screening equipment manufacturer EvoQuip introduced the Bison 160 hybrid hook-lift jaw crusher.

Described by the Terex brand as ideal for construction and demolition recycling applications and urban areas, this is the fourth model in the Bison series and the first to use hybrid diesel-electric drive technology to reduce running costs in addition to cutting noise and fuel emissions.

The dual-powered Bison 160 is equipped with a proven 700 x 500 mm (28 x 20 in) single toggle hydraulically adjustable jaw crusher.

HITACHI

Hitachi introduced a range of new high-performance hydraulic breakers that match its range of excavators in the range from ZX10 up to ZX890.

The company describes the breakers as ensuring maximum productivity, high performance and low total cost of ownership – while the slim design of the breaker is said to ensure easy accessibility in demolition applications.

The mono-block cylinder with a replaceable cylinder liner has been developed to reduce the number of parts in the attachment.



Hitachi introduced a range of new hydraulic breakers

LABOUNTY

USA-based industrial tools and attachment business Stanley Infrastructure's LaBounty brand has added a new attachment to its demolition portfolio.

The Multi-Jaw Demolition Tool (MRX) is suited to both primary and secondary demolition applications as well as off site concrete processing.

Designed for efficient downsizing and equipped with 360° rotation, the MRX is described as having a short centre of gravity for optimal control and manoeuvrability.

It features an interchangeable jaw with options for a concrete pulveriser, concrete cracker or shear.

LaBounty has also introduced the Mobile Rotation Pulveriser (MRP) to its line up. Similar in design to the MRX, it has a dedicated concrete pulveriser jaw.

MCCLOSKEY INTERNATIONAL

Crushing and screening specialist McCloskey International has expanded its mobile solutions with a new product range – shredders. The VTS95 is the first product to make its debut for the company's new Recycling Division.

Designed for maximum performance and high productivity, McCloskey says the VTS95 tracked primary shredder is capable of effectively shredding virtually any type of material including solid, industrial, commercial waste and bulk waste.

It is designed to meet the requirements for plants in which the incoming materials vary greatly in terms of size, composition, and difficulty to shred.

SANDVIK

Sandvik launched Peak Screening, a solution to help ensure every square metre of a customer's screening to be as productive as possible.

The company said its screening equipment, media and services are designed to work optimally with each other.

It added that customers will also benefit from having ongoing access to experienced specialists in configuration, optimisation and troubleshooting.

As a result, it has now introduced three ranges of screens, with solutions including the WX6500 tensioned rubber screening media with up to 15 times longer wear life than standard wire mesh, but with the same screening accuracy for superior productivity and uptime.

Steelwrist and Inmalo co-operate on couplers

Inmalo, a leading supplier of hydraulic excavator attachments in the United Kingdom, has signed a co-operation agreement with Steelwrist for the supply of fully automatic couplers and attachment interfaces. Demand for fully automatic coupler systems in the UK demolition industry has been growing for some time, and Inmalo will now be offering the range of quick couplers and attachment adaptors from the Steelwrist SQ product line. The SQ system is suitable for all types of excavators.

"We are a leading supplier of demolition attachments and dust suppression systems so the synergy between the current equipment and the Steelwrist coupler is clear," said Inmalo director Charles Polak.

"We chose Steelwrist due to their leading product innovation, safety features and compatibility across the broadest range of attachments and carriers."

Steelwrist quick couplers are known for safety features such as Front Pin Lock, robust steel cast design, and allowing the customer to change hydraulic powered work tools quickly without leaving the cab.



TREVI BENNE

Italian company Trevi Benne has launched the FR 120 rotating pulveriser.

The new product has an opening of 1,655 mm (65 in), a weight of 13 t and a force on blades of 820 t.

It is part of the FR Series which the company says has higher performance and resistance to stress, stronger rotation, superior breakage efficiency and a longer lifetime. ■



Shredders, a new area for McCloskey International



The EvoQuip Bison 160 hybrid hook-lift jaw crusher





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Last year, American specialist contractor Kiewit began the challenging project of taking down the Alaskan Way Viaduct in the urban confines of Seattle. Here is what happened next.



The viaduct before demolition. The Governor of Washington State had said a decade earlier that it should be taken down

Finding the Way

The Alaskan Way Viaduct is a 65-year-old double-decked, predominantly reinforced concrete freeway in dense urban downtown Seattle, which was damaged by the 2001 Nisqually earthquake. Demolition began in February 2019, a decade after the Governor of Washington State said it should come down.

As part of the overall Alaskan Way Viaduct Replacement Programme, Kiewit was awarded a contract to demolish the 2.25 km (1.4 mile) long, earthquake-vulnerable structure and foundations, including on- and off-ramps. The Kiewit team was also tasked with demolishing 64 m (210 ft) of two steel girder structures spanning BNSF railway mainline tracks, as well as decommissioning the Battery Street Tunnel.

The viaduct is on waterfront next to the famous Pike Place Market, a popular and congested tourist destination, which made vehicle and pedestrian traffic as well as the safety of the public a real challenge.

It also abuts many buildings, including some that are historically sensitive, along the corridor – in places to within just a few inches. At the northern end of the project things are complicated by a steep slope and spans over the railway.

“Our goal is to have as little impact as possible. All that’s a big challenge, and we are well prepared for it,” said project manager Dan Hemenway.

Kiewit engaged Foothills Bridge Co to plan the cut and pick work adjacent to the BNSF

mainlines at the north end of the corridor, while the Sigma Group planned most of the demolition. The Kiewit team prepared staging drawings detailing sequence and stages of work, site fencing and gates, soft barrier parcel boundaries, and temporary easement restrictions.

These plans were crucial in ensuring work was performed safely and on schedule.

Demolishing the viaduct primarily using mechanical demolition methods was made possible by the specialised equipment used by demolition subcontractor, Ferma Corporation, including three high-reach 115 to 200 t hydraulic excavators extending up to 21 m (70 ft). This allowed upper deck demolition to occur from the ground, significantly speeding up the operation.

The attachments used allow mechanical demolition in confined spaces while also

minimising the impacts of vibration, noise, and dust. Universal Processors (UP) rotate 360° and transform from a concrete pulveriser to a steel shear by changing blades inside the jaw of the processor. These UPs process the concrete in place, greatly reducing the risk of falling debris and the “concussion” effect to surrounding historical buildings and infrastructure that impact hammers would produce. Rotating steel shear attachments are used to cut through the rebar on the project; they are similar to the UP but designed to easily cut steel up to 25 mm (1 in) thick, reducing required manpower and performing the work in a safer manner than conventional torch butting.

Ferma also used 30, 90 and 210 t cranes, conventional excavators, mini excavators, and loaders to complete the demolition. By using mechanical demolition methods for most of the work, the Kiewit team was able to complete viaduct demolition quickly, safely, and with minimal impacts to the surrounding structures and community. Saw cut and removal demolition methods were used with one crew along the alignment where the viaduct spans and abuts the BNSF railway.

To provide schedule certainty and to maintain traffic flow and access, Kiewit divided the demolition work into three areas, with up to five crews working at the same time.

The sequence for removing the viaduct was:

- fence off the area and complete preparatory work and staging
- install water handling and utility protection
- remove the upper deck between girders using impact hammers
- remove the stringers, floor beams, and girders from upper and lower decks using high-reach excavators with specialised attachments
- remove the columns
- remove the foundations, in some places 1.5 m (5 ft) below grade and restore the site.

Kiewit was also responsible for decommissioning the Battery Street Tunnel; its environmentally friendly solution proposed to recycle all viaduct rubble to fill the tunnel. Ultimately, the tunnel was set to hold 43,600 cu m (1.54 million cu ft) of the former viaduct while recycling the bridge has saved more than 38,000 cu m (1.35 million cu ft) of rubble from entering local landfills. ■



Ferma equipment tackles demolition debris at the site



Only a short distance from the viaduct, life in downtown Seattle goes on

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As the International Media Partner of the European Demolition Association (EDA), **Demolition & Recycling International** brings you the latest EDA news in a dedicated part of the magazine

Closing the loop

The European Demolition Association has participated actively in the publication “Circular Economy Principles for Buildings Design publication”

The circular economy is on everyone’s lips in construction industry to increase resource efficiency in the building sector, but it is not an easy road.

For this reason, the European Demolition Association (EDA) has participated in several working group meetings to contribute to the creation of the “Circular Economy Principles for Buildings Design”, launched by the European Commission.

This document is one of the results of the Construction 2020 strategy and the circular economy package and connect directly with the European Green Deal.

It is a step forward from the “EU Construction and Demolition Waste Protocol and Guidelines for predemolition waste audits” because the current document present a set of principles for the sustainable design of buildings with the aim to generate less construction and demolition waste as well as facilitate the reuse and recycling of construction materials, products and building elements, and help reduce the environmental impacts and life cycle costs of the building.

The principles included in this publication are aimed at informing and supporting actors along the construction value chain, this

document provides principles for circular design of buildings.

The document is aligned with the launch of Level(s), a voluntary reporting framework to improve the sustainability of buildings.

“Circular Economy Principles for Buildings Design” included not only general principles, but also principles relevant to each target groups in the construction sector:

- building users, facility managers and owners
- design teams (engineering and architecture of buildings)
- contractors and builders
- manufacturers of construction products
- deconstruction and demolition teams
- investors, developers and insurance providers
- government/regulators/local authorities.

The three main pillars to achieve to close the loop of the circular economy in building design are:

- durability through building and elemental service life planning, encouraging a medium to long term focus on the design life of major building elements, as well as their associated maintenance and replacement cycles.
- adaptability meaning extending the service life of the building, focusing on prevent premature building demolition by developing a new design culture

(replacement and refurbishment)

- reduce waste and facilitate high-quality waste management, designing products and systems so that they can be easily reused, repaired, recycled or recovered, facilitating the future circular use of building elements, components and parts.
- If all those involved in the construction industry, including economic operators in the value chain, policy makers and legal and technical actors work together, we will achieve a reduction in the environmental impacts and life cycle costs of buildings. ■

Brown and Mason joins

The European Demolition Association (EDA) has announced that United Kingdom-based contractor Brown and Mason has become the latest organisation to take up membership.

Brown and Mason is one of the world’s leading industrial decommissioning, engineering, dismantling and demolition companies.

Carrying out large-scale demolition and asbestos removal contracts for over 60 years, it specialises in the heavy industrial demolition sector with blue chip clients from the power generation, petrochemical and pharmaceutical sectors as well as local authorities, property developers and banking establishments.

With expertise provided by its in-house explosive engineering team, the company provides the design, planning and execution of demolition events including liaison with residents on the event day.



Brown and Mason is one of the world’s leading demolition companies and has an in-house explosive engineering team

Convention update

Due to the situation generated by Covid-19 and its consequences in Europe and around the world, the European Demolition Association (EDA) board of directors has decided to cancel this year’s annual event, which had been rescheduled to take place in Paris, France, in September.

The association said the safety of attendees and sponsors is paramount.

Despite having moved the date from

June, the association sincerely believes that cancellation is the best and most sensible thing to do given the current circumstances.

Regardless of the cancellation, the EDA General Assembly will be held this year on June 24, via video conference.

The 2021 convention will now take place in Serbia, Belgrade, the original scheduled venue for the 2020 event.

The dates are from June 10 to 12. ■

About the EDA

The European Demolition Association (EDA) was founded in 1978 and is the European platform for national demolition associations, demolition contractors and suppliers. It organises annual events to bring together the demolition industry from all over Europe. The most important one is the Annual Convention, a meeting that includes technical presentations about key topics as well as optional leisure activities. The EDA represents thousands of companies through its national associations and direct memberships. Demolition & Recycling International is the international media partner of the EDA.

■ For more details, please visit: www.europeandemolition.org



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How has Covid-19 affected demolition projects?

Richard Vann, managing director of the RVA Group explores the rapidly changing landscape of the demolition industry during the global Coronavirus pandemic in his latest column.

Every time I pen some thoughts for a column, there is always the chance that the external landscape may have changed by the time my views appear in print. In the past few years, I have sometimes been asked to speak about Brexit, for example, and consequently tried to cover multiple scenarios to ensure the commentary remains relevant.

Fast forward to the situation we currently find ourselves in – the global battle against Coronavirus – and the landscape has never been so fluid.

Everyone is perhaps tired of hearing the fact that we are experiencing “unprecedented times”, but of course that admittedly overused phrase is incredibly true. That said, when planning, savvy organisations try to anticipate various eventualities – from best to worst case. So, while we are perhaps facing extremities of planning that some demolition firms will unsurprisingly not have encountered before, we must stick to the same underlying principles we are used to.

NON-NEGOTIABLE BASELINE

I have always said that no two projects are ever the same in the world of demolition, and Covid-19 has not changed that. In addition to all existing EHS (environment, health and safety) protocols, adherence to safe distancing regulations must be the non-negotiable baseline, of course, and continued monitoring of evolving guidance is paramount. But there are then multiple other project-specific factors to accommodate too – they have not been eradicated because of the virus.

Speaking from personal experience over the past few weeks, we have seen some projects adapt rapidly to a “new normal” and approximately 70% of our sites have remained open as a result. Elsewhere, other works have stopped entirely, for the foreseeable future. There has not been a singular method of coping with the pressures being faced.

We are currently supporting a UK pharmaceutical client with a project in a live and operational environment, for instance, and the schedule here remains almost uninterrupted. In the first few weeks of lockdown, we continued to develop our

decommissioning specifications and plans remotely, rather than on site. And, when it was essential to physically inspect the plant, for example, the client arranged a system to visit the workforce on our behalf and feed information back.

This client is considered an essential business so has kept a core production team on site, meaning visits to site could be organised relatively swiftly. We have maintained regular contact via video calls throughout, when not in the same physical location, so that we can continue to consult with one another, and this media-rich form of communication has worked well. At the time of writing, we hope to have a full team back on site soon, with social distancing measures naturally in place.

Other sites closed for approximately a couple of weeks when the United Kingdom prime minister Boris Johnson first announced the lockdown. In these instances – typically projects at the physical decontamination, dismantling or demolition phase – such “pauses” provided an important opportunity to take stock and devise plans with contractors and clients. These included introducing upgraded security measures and temporary make-safe operations. With the duration of the suspension period being unknown, a range of flexible care and maintenance regimes also had to be considered.

PREVENTING SKILLS GAPS

Again, every scenario has been different. However, generally the priority has been to reduce the number of people on site to the absolute minimum, while being careful to prevent any skills gaps arising. On this note, it is important to stress that the usual project safety considerations must remain paramount – Covid-19 or no Covid-19. A proficiently skilled team is always required to carry out the work, so now is not the time to cut corners. If the work cannot be carried out safely with a condensed team, it cannot go ahead.

There are projects elsewhere that stopped completely, either for reasons such as this or because the client was more comfortable

allowing schedules to be reframed. The current commodity value of scrap metal has come into play too, as well as logistical difficulties associated with moving materials.

DIFFERING REGULATIONS

We are now seeing positive movement on most of these sites though. The biggest changes have centred upon access and accommodation arrangements for staff, so that we have utmost confidence that people can shower, eat and use toilets without compromising social distancing guidance.

Given our international presence, we have had to remain abreast with slightly differing regulations from one country to the next. But this is the way we always work – whether we are in the thick of a health crisis or not. We must be respectful of every client situation, cultural variations and so on. But whatever the local rules and customs may be, we will never put people at risk. ■



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