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January/February 2022 | Issue 72



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PJ Thory Ltd invest in a new AggReclaim System supplied by Molson Washing



Established in 1965, Peterborough based PJ Thory Ltd have grown and developed into the region's largest supplier to the construction, agricultural and commercial industries. They supply several diverse products including a vast range of gravels and shingles, sands, granites & limestones including single sizes and certificated subbases. They also offer recycled materials to Type One & 6F2 specification from their wide range of quarries and recycling yards which allows them to supply materials at competitive rates.

At their PJ Thory Peterborough Quarry operation, they have operated a wash plant for the last seven years. As demand has risen, they have found themselves unable to satisfy this ever-increasing demand and with no ability to extend their lagoons they were unable to support the addition of another standard washing plant.

With a solution needed to service a new contract an introduction by Molson Washing to the new AggReclaim system left them with no hesitation to invest in this innovative system.

This new system has not only increased and supplemented the production of sand and gravel for PJ Thory but has made a significant reduction of water usage throughout the process.

"Having seen the new AggReclaim at the recent Molson V.I.P. event I was keen to see the machine in a working environment, so I met John Dunne on-site to describe the operation," said HUB-4 Editor John Edwards.

John Dunne - MD of Molson Washing, takes up the story, "Traditionally wash plants pump sand to cyclones which require significant amounts of water to pump sand to keep it moving through the pipes.

"The AggReclaim System we have brought to the market hasn't got a separate 'stand-alone' sand system because it's incorporated within the specially designed and patented screen box. Where we are moving material, we are putting in an 'all-in' feed ranging from -50 to 0, with anything that floats being scraped out backwards at the rear of the machine. Everything else then moves forward in water; with the water, sand, and silt moved forward mechanically by the 8-metre-long scrubber with the very heavy-duty paddles producing an aggressive attrition.

"With all the material hitting the top screen, the -50/+4mm stone is cleaned and taken off and graded into a 3-way split of 40/20/10mm. What goes through the screen is the water and all the sand and silt onto the bottom deck which is configured as an uphill dewatering screen. This is fitted with a 0.3mm mesh which allows 90% of the sand to be captured on the screen with the water flowing backwards. However, the underflow from that screen still contains 300/150/75µm therefore this is all pumped back onto the top of the bed of sand, or into a small cyclone cluster, resulting in a concrete specification sand and clean stone with the silt going back to the pond."





Significant water savings:

Designed to operate at up to 70tph, the AggReclaim system uses approximately 1 cm metre of water per ton of input material against a standard wash plant moving 3.5 cu metre of water per ton of input material simply because it is required to move sand along pipes in contrast to the mechanical operation and the use of gravity of the Agg Reclaim system.

John, continued, "We have also designed a super fines cluster of cyclones that we can fit for clients doing remediation work who desire a cut down to 30/40µm."



Processing ability:

Although the AggReclaim is processing natural sand and gravel for PJ Thory it will also produce the same results whether it is scalplings, crushed dust, soil washing or anything that has sand and gravel in it or stone and fines.

John, added, " We have a prototype in Wales processing crushed dust and when the unit at PJ Thory Peterborough Quarry has finished its current production increase it will then move to another PJ Thory recycling site in Peterborough where it will be tasked with recycled soil washing.

"It occupies a small footprint, and it is easy to install, taking around 2 days and should not require specific planning as it is classed as a flotation unit. Basically, it is a remarkably simple method of producing saleable in-specification sand and washed aggregate. In essence the entire system relies on the finite settings and a specific of resonance within the screen box together with other special settings throughout the system."

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Welcome to issue 72

Welcome to our first edition of 2022 - issue 72.

In this issue the team at Hub-4 present you with another bumper edition reporting on the latest news from the Quarrying, Recycling & Bulk Handling Industries, including a spotlight on Aggregate Crushing & Screening.

This year the Hub-4 magazine will have extra circulation in four issues for extra exhibition distribution – IFAT, Hillhead, RWM & bauma in October.

2022 also sees the return of our bi-ennial edition of our **MADE IN IRELAND** special which will be published in the November edition.

Onwards into 2022:

If you're starting to look at marketing in 2022 our new media file with feature list can be found here, either PDF download or page flip version:
<https://hub-4.com/pages/advertise-with-us>

Electronic advertising is also available on the website and on the weekly e-newsletter which is distributed to our readers which is on-line here: <https://hub-4.com/pages/newsletter>

Our increasingly popular social media packages are also available across all our Twitter, Facebook & LinkedIn pages all of which can be linked with electronic web and e-newsletter advertising – why not enquire about our extremely competitive packages.

Finally, our second edition of 2022 will focus on **Aggregate Washing & Screening**, and I welcome any editorial contributions for this issue.

John Edwards

Editor



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March/April 2022

Aggregate Washing & Screening

A special focus on... static & mobile washing, hoppers, conveyors, cyclones, pumps, trommels, log washers, filter press, plate press, flocculants, scrubbers, separators, lignite plant, dewaterers, classifiers, belt weighing, contract washing.



Editorial copy deadline 7th March 2022 - Advert copy deadline 15th March 2022



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We will then review your application. The Hub magazine is available for overseas clients on a paid subscription at £115, for six issues, please email subscriptions@hub-4.com.



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McCloskey unveils a new brand focused on Recycling & Environmental Solutions

McCloskey evolves globally as recycling profile and market grow...

Due to a dynamic expansion and the realignment of its recycling capabilities, McCloskey International has announced a new brand identity that will support the evolution of this business unit and reinforce its commitment to the waste recycling sector worldwide. The business will move forward under the new brand of McCloskey Environmental (MCE).

The world is facing some major challenges. Climate change combined with the ever-rising demand for energy and raw materials are all placing the environment under increasing strain. To prevent these challenges from resulting in a hopeless situation, long-term solutions are required. The primary task of McCloskey™ is to make a positive contribution to meet these challenges.

McCloskey® has assisted in diverting millions of tonnes of waste from landfill with its 35+ years of designing and manufacturing industry leading crushers, screeners and stackers working in a variety of applications.

The strategy for the new division is built on partnership with companies that have the expertise to deliver solutions that maximise profit and deliver exceptional performance. Together with these companies McCloskey Environmental will design and manufacture a full range environmental products including shredders, trommels, and stackers.

The new design and colour scheme pays homage to McCloskey's brand equity and reflects the maturation and evolution of an industry leader with a dedicated and committed global network.

Speaking about the launch, McCloskey Product Line Director, Ben Frettsome, said; "Our customers are always seeking modern, flexible and cost-effective waste processing solutions. Our customer-driven approach to product development has led us to invest significantly in the establishment of this new business unit, focused on the design and manufacture of high-quality recycling equipment. The products produced by McCloskey Environmental will deliver significant advantages to customers, including lower cost of ownership, lower cost of production, and ease of operation and maintenance."

Fergal Mallon, Product Line Manager, McCloskey Environmental said: "McCloskey is leveraging their engineering experience to develop new equipment for the global recycling sector at a key time. It's time for a smarter approach to waste processing and to collaborate with customers."

Global requirements are becoming more stringent, and McCloskey is in the perfect position to provide recycling products and solutions to assist customers in meeting these standards. Over the past twelve months a team of highly skilled and experienced Design Engineers have developed an impressive range of smart solutions for the sector.

Mallon added: "Looking ahead, we are very optimistic about the future of this division and the strong position we are in going into 2022. We have an exciting list of products introductions and strong partnership announcements in the coming months."

For more information please visit:
www.mccloskeyenvironmental.com

TURMEC completes the design and installation of State-of-the-Art Waste Recycling Facility for Thorntons



Key Facts - Case Study

- C&D C&I plant rebuild
- Material type: C&D / C&I
- Hours per annum: 4000
- Input capacity: C&D Processing line 60 tph & C&I processing line 40tph
- Annual capacity: 250,000 tonnes



Overview

Thorntons Recycling is a family-owned business established in 1979 by Pádraig & Carmel Thornton, based in Dublin, Ireland. The company has grown into one of the largest professional waste management companies providing waste collection, recycling, and recovery services to customers in Dublin, Meath, Kildare, Wicklow and nationwide. Annually Thorntons processes over 700,000 tonnes of material through its 9 facilities including Ireland's largest food waste Compost facility at Kilmainhamwood, Co Meath. It employs over 550 staff and has a collection fleet of over 150 vehicles. The business is operated in compliance with a number of International Standards – ISO 9001, ISO14001, ISO45001 and EN15713.

The Challenge

In January 2021 Thorntons Recycling suffered a major fire at one of their largest processing facilities at Killeen Road in Dublin. This fire was devastating and required a total re-instatement of all equipment within the fastest time possible to minimise business interruption.

This gave Thorntons an opportunity to build a new processing line that was:

1. Designed to maximise segregation and recycling
2. Aailed of the best available sorting technology
3. Purpose built to suit the waste and needs of Thorntons Recycling
4. Designed to fit into the previous building footprint
5. Was reconfigured to allow Thorntons to move potential odour material to a better processing location on site
6. That was energy efficient and reduced emissions

They went to tender looking for a partner to design, procure and build a plant for them that would support their existing business where they serve over 80,000 customers each day, and improve efficiencies.

In March 2021 Turmec were awarded the contract to deliver a plant with a throughput rate of 100 tph comprising of 60tph C&D (Construction & Demolition Waste) and 40tph MSW (Municipal Solid Waste). The plant separates metals (ferrous & non-ferrous) from MSW materials received and produces SRF from low grade paper, cardboard, and plastic.

The Solution

Thorntons requirement was to recycle and recover as much material as possible from the mixed waste it collects and processes thus diverting waste away from landfill. Turmec designed a highly automated, bespoke plant for Thorntons that minimised the operating footprint and recovers the high value materials suitable for recycling, produces an SRF grade



refuse derived fuel from the paper, plastic, cardboard, and timber not suitable for recycling and keeps the residual bound for incineration or landfill to less than 5%.

The primary materials recycled are wood, metal, hard plastics, and tyres. The main items recovered are stone, aggregates, soil, inert fines and SRF (comprising timber, soiled paper, cardboard, and plastic) By turning this material into SRF Thorntons Recycling are producing a sustainable, valuable product that assists with reduction in dependence on fossil fuels, reduces CO2 emissions and diverts materials away from landfill.



The overall rebuild project consisted of the re-instatement of new buildings, yard space as well as the Turmec supplied plant. To ensure the project was delivered in the shortest possible time, Turmec worked closely and in conjunction with the civil and electrical contractors to complete the project within the agreed timeframe.

Turmec designed and installed the new state of the art facility within 9 months from order. All components of the installation are fully CE marked to all the relevant European safety standards.

The Results/ Outcome

The project was delivered on budget and on time, with minimal impact on the Thorntons business. Thorntons

Recycling have transformed their business and the way they now process waste material on the site.

Thorntons Recycling now have the most efficient and effective plant, with the most innovative configuration and technology in Europe. This increases the efficiency of waste handling and improves waste segregation, assisting Thorntons to continuously achieve over 95 per cent recycling/recovery as well as being able to process C&D, C&I and MSW for the Greater Dublin Region.

“The new processing line was designed for optimum segregation and recycling, availing of the best available sorting technology. Having the site designed and purpose built to fit to the existing footprint allows us to process our recycling materials with improved efficiency and preferred area designation. The sheds were rebuilt using cutting-edge technology for better integrity and sealing to prevent escape of air from the shed. The entrance/exit points are fitted with rapid roller shutter doors and modern odour abatement technology.” David Duff EHS Manager, Thorntons Recycling

“Turmec has provided Thorntons with a quality solution. From the time the plant was initially designed and ordered until it was commissioned Turmec kept the Thorntons team up to date and appraised of all issues and progress on the project. Working together everybody achieved more and brought the installation in on time and within budget. I would like to thank Turmec, and the other contractors involved in this project for their dedication and effort in getting the facility re-opened in such an expeditious and safe manner.” Gary Brady, CEO, Thorntons Recycling

“We have worked with Thorntons for many years and have a long-standing relationship however when we were awarded this tender, we were committed to providing the most efficient and effective plant with the most innovative configuration and technology that Europe had to offer. I am proud that the Team at Turmec could deliver a state-of-the-art facility within 9 months from order.” Gavin Dunne, Technical Sales, Turmec



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Jonathan Wilson at the recent Molson Open Day

Wilson steps away after record year for Molson

Molson Group founding director, Jonathan Wilson, is today stepping down from his role as joint Group Managing Director of the company, after 26 years...



Jonathan Wilson and Robin Powell set up Molson in 1996, and during that time have worked closely to grow the business to its present size, with a turnover of more than £251 million, nineteen divisions and fifteen locations across the UK.

The two directors, who have remained firm friends throughout, will continue to be business partners in several other ventures.

Robin Powell, now sole Group Managing Director, is proud of what he and Jonathan have achieved together over the past 26 years. He said: "We built Molson Group from the ground up, and whilst there have been tough times, as with any business, we have also experienced tremendous highs and we have always enjoyed working and collaborating together."

"I want to take this opportunity to formally acknowledge Jonathan's huge contribution to the success of the business. His talent and experience have helped shape Molson over the years, and I have learned a great deal from him. Among his many talents are a laser-like ability to focus on the detail, and a gift for building deep and lasting business relationships."

Jonathan Wilson said: "I am immensely proud of the success that Robin and I, and our fantastic team, have achieved with Molson Group. I step away safe in the knowledge that the business will continue to thrive and grow in the coming years. I wish Robin and his team every success and will watch with interest as they continue on their journey."

Powell added: "He will be missed by everyone in Molson Group, but we all wish him the very best with his ongoing business and personal interests."

Wilson leaves Molson Group in a position of strength, after a record turnover year, with full order books for 2022. Powell comments: "Molson is well prepared for further growth and poised to thrive in a time of dynamic change in the industry. There are exciting developments afoot at Molson, too, with our sector leading IT platform nearing maturity, pioneering fuel efficient and electric vehicles and our involvement with HS2."

Molson Group, which has its headquarters in Bristol, is the UK's largest independent supplier of plant and machinery, providing a sole source supply to customers in the construction, demolition, ports, recycling, and waste management sectors, through its 360° product range. Molson is a fast growth, acquisitional company with ambitious plans for the immediate and longer-term future.

It has a strong focus on sustainability, collaborating with clients to reduce their carbon footprint through the efficient use of machinery using its propriety data technology platform.

By planning ahead for the future use of hydrogen, by working with manufacturers and by building all new depots as hydrogen ready, Molson is committing to reducing our industry's carbon footprint and preparing for future growth.



L-R: Steve Edwards, Aftersales Manager, Sean McGeary, Sales Director

Blue Machinery (Central) appointed the new Doosan dealer for the Northwest and North Wales

Blue Machinery (Central) Ltd are delighted to announce that they have been appointed the Doosan distributor for the entire range of Crawler Excavators, Wheel Excavators, Articulated Dump Trucks, Wheel Loaders and Mini Excavators across the Northwest and North Wales. Representing Doosan throughout Lancashire, Merseyside, Greater Manchester, North Wales, Cheshire and the Islands of Anglesey and the Isle of Man.

Doosan Infracore Europe are a market leader in the manufacturing of heavy-duty equipment used across the construction, demolition, infrastructure, quarrying, mining, landscaping, recycling, scrap, ports, and rail industries.

The Doosan range of Crawler Excavators start at the 14 tonne DX140LC-7 right the way up to the 80 tonne DX800LC-7. Whilst their Wheel Excavators range from the 11 tonne DX100W-7 to the 21.9 tonne DX210W-7. Doosan's Mini Excavator offering combines the highest level of efficiency with performance to offer powerful digging capabilities, great hoisting power and convenience for diverse work environments. The new generation of Doosan Excavators are the perfect mix of power and performance across a wide range of applications.

Doosan offer two Articulated Dump Trucks with the DA30-7 and DA45-7, which are manufactured for long working lifetimes. Their outstanding fuel efficiency and unique design puts them ahead of the competition.



Doosan Wheel loaders offer exceptional power and speed, making them effective even in the toughest of conditions. The series ranges from the 12 tonne DL200-7 all the way up to the 34 tonne DL580-7. Whether you are working in construction, quarrying, wood waste or recycling, they have got you covered!

The addition of the Doosan brand to Blue Central's product portfolio allows them to become the ultimate 'one stop shop' for customers operating across a whole host of industries and applications. The Doosan range will complement Blue Central's existing market leading equipment from brands including Doppstadt and the three Terex products of Powerscreen, Fuchs and MDS.

As well as supplying customers with their new Doosan equipment, Blue Central provide the best levels of back up

and support you will find in the industry. With a network of engineers working across their region, they offer total support throughout a machine's lifetime. Their 'Blue Care' service packages allow customers to choose the level of service which works best for them, to help improve a machine's efficiency whilst minimising the cost of ownership.

Blue Central also supply genuine Doosan OEM parts, with a large stock holding they can provide same/next day service on all stock items to keep customers machines up and running. They have dedicated parts professionals who have a wealth of expertise and knowledge to offer customers the support they need on Doosan parts across the whole product range.

This new distribution partnership has led to significant investment from Blue Central as they acquire a second facility. The new 4-acre site based in Nantwich (Cheshire) will function as a dedicated depot for their Doosan equipment and spare parts. They have also grown their team to help support the Doosan brand with the addition of a new operations team and sales representatives. They have also recruited a number of factory trained engineers who have been equipped with specific diagnostic tooling and equipment.

Sean McGeary, Sales Director at Blue Central comments: "We are very excited to introduce the Doosan product range to our supplier portfolio. We recognise the significant market share that Doosan have in the region and feel that the range complements our existing suppliers such as Terex Powerscreen, MDS and Doppstadt, and helps us complete the product offering to our clients. The Doosan range spans all our existing industry sectors from Construction & Demolition and Quarrying & Earthmoving to Recycling and Scrap Handling as well as Ports, Rail and Plant hire.

The addition of Doosan forms part of a long-term plan of growth for our family-owned distribution business and allows us to scale our aftermarket offering. We continue to aspire towards excellent customer service and are committed to continue our investment in our people,

products and customers."

Kim Dudley, Doosan Regional Manager UK-North and Nordics comments "We welcome the appointment of Blue Machinery Central as our Authorised dealer for the Northwest and North Wales. They bring their strong after-market support and parts expertise to the Doosan Construction products in the region.

With all the stage V diesel engines and Dash -7 Mid and Heavy product launches completed in 2021 and new products like the DX100W 11tonne Wheeled Excavator and new Mini Excavators coming on-stream early in 2022, it promises to be an exciting year.

Blue Machinery Central have committed to carry depth of stock of new machines and parts, to offer excellent levels of support and availability of Doosan products. We trust Doosan customers will give them the opportunity to deliver the latest dash 7 products in 2022 and experience the new comfort levels, fuel economy and superb performance of the dash -7

Contact Blue Machinery (Central) Ltd

Sales Office and Parts store - New Cheshire Business Park, Wincham lane, Northwich, CW9 6GG

PDI Centre - Hurlleston Business Park, Chester Road, Hurlleston, Nantwich, CW5 6BU

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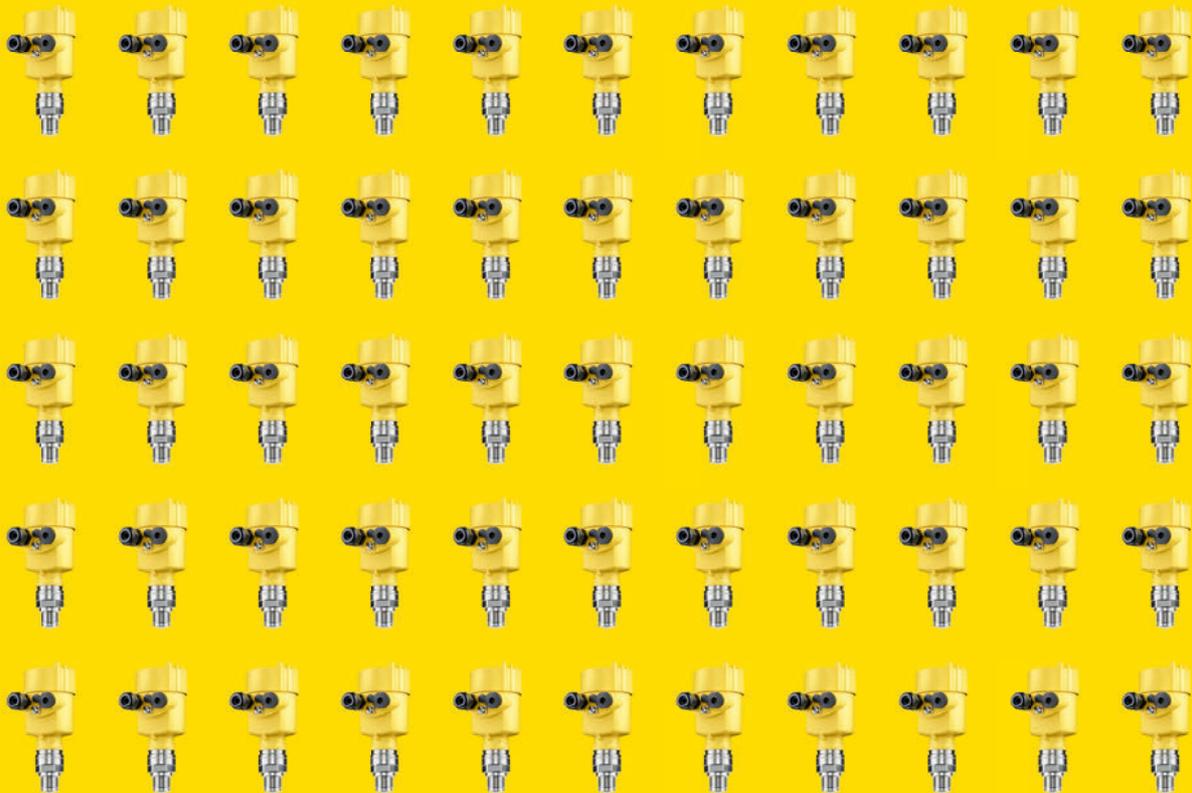
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Quarry near Swindon reveals Neanderthal hand tools alongside Britain's biggest mammoth 'graveyard'

A Hills Quarry Products' quarry north of Swindon in the Cotswolds has revealed what is being described by Historic England as 'one of Britain's most significant Ice Age discoveries in recent years'...

The remains of at least five Ice Age mammoths, including two adults, two juveniles, and one infant were discovered, with a number of stone tools made by Neanderthals found nearby.

The discovery was initially made by amateur fossil hunters, Sally and Neville Hollingworth, who were given permission by Hills to explore the area. Realising the significance of their find, additional resources were brought in to tackle this important discovery.

The research team, which attracted funding from Historic England and was led by archaeologists from DigVentures, believe that both the artefacts and mammoth remains date to around 210,000 – 220,000 years ago, towards the end of a warmer interglacial period when Britain was still occupied by Neanderthals. Towards the end of this period, early humans abandoned Britain as temperatures plummeted and the landmass was plunged back under ice.

It's not yet clear whether the mammoths were killed by Neanderthals, or why so many were found in one place, but archaeological sites from this period are incredibly rare, as is evidence of how Neanderthals interacted with mammoths, making this discovery one that has enormous value for understanding of Neanderthal behaviour, not just in Britain but across Europe.

The significance of the discovery was filmed by Windfall Films and is the subject of a BBC1 television documentary featuring Sir David Attenborough called "Attenborough and the Mammoth Graveyard" and will be aired on Thursday 30th December at 20:00.

Peter Andrew, Group Director for Hills Quarry Products, said: "Hills has a long-standing relationship with Sally and Neville Hollingworth, and we provided substantial resources towards making sure that the area remained accessible during the various phases of excavation.

"Having worked in the Cotswold Waterpark area for many years, we are very familiar with archaeological finds, but this latest discovery has turned out to be quite unique. We have been amazed by the interest in the project and the results of the research which provides an insight into Britain's Ice Age environment and the world as it was lived in by our closest human relatives.

"We are extremely proud of the contribution we have made to bring this great story to life. It was an honour and privilege to host Sir David Attenborough during the filming of the documentary, and we cannot wait to see the final programme to be aired."

Additional finds at the site include:

- Remains of Steppe bison, brown bears, horse and hyena
- A number of stone tools made by Neanderthals including a hand axe and 'scrapers' – small flint tools that would have been used for cleaning fresh hides, as well as debris from making other unknown tools.
- Seeds, pollen and plant fossils, which showed that extinct types of trees and beetles lived around the site, including the dung beetle who co-evolved with Ice Age megafauna and whose droppings they used for food and shelter.



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RMGroup's new state-of-the-art website delivers a first-rate user experience

Leading robotics and automation specialists, RMGroup, has recently launched an impressive new website, showcasing its knowledge, innovation and automation expertise. The company designs, manufactures and supplies a wide range of manual and automatic packaging machinery, packaging systems and robotic automation to an expansive customer base spanning food and beverage, horticultural, aggregates, chemicals and agricultural industries.

The modern and engaging site incorporates the very latest web development technologies and boasts a whole host of features, including a fresh layout that means that visitors can access every page with ease, regardless of whether they are browsing from a desktop computer, tablet or smartphone.

With the homepage displaying an immersive animation of RMGroup's comprehensive capabilities, visitors to the site will be wowed from the get-go. Created with the user experience in mind, the site includes many features to facilitate quick and easy navigation. Searching the portal via product or industry produces relevant solutions, including images, technical specifications and supporting material such as videos, case studies and all important customer testimonials.

Key areas of the site include information on RMGroup's service and support, where users will be able to learn how the company provides its customers with industry leading service and aftersales care, and the media and resources hub, which contains a wealth of valuable content, including brochures, case studies, videos and press releases. Additionally, and following the company's recent opening of a US subsidiary in Delaware, the site's content has been configured to provide international visitors with a more inclusive experience. Full language options are also available.

"Developing the new website was something we were eager to do last year, so that we could present our innovative solutions and expertise in an even more user-friendly and engaging way," said RMGroup's Rosie Davies.

"The new platform is easy to navigate and intuitive, so whether you are looking for our bulk bagging solutions, automatic bag filling, robot palletising, or the very latest in AGV technology, everything can be found quickly and easily on the new site," she added.

For more information on RMGroup visit their new look site at <https://rmgroupuk.com>

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A New Year and a New Us - Certora Training



From 4th January 2022, Mentor Training Solutions along with qualifications business, Serac UK have combined business systems and operations to become Certora Training Limited.

Certora Training will remain focused on the experience of their customers and those who choose to undertake training and qualifications with them whilst also adapting and growing their services to best suit the requirements of their longstanding and growing customer base.

By combining both Mentor Training Solutions and SERAC, Certora will see greater efficiencies in their overall customer service as they continue to deliver the highest quality accredited sector-specific equipment operator training, safety courses and specialist vocational qualifications. Servicing industries including quarrying and extractives, building products, waste, recycling, construction, facilities management, utilities, and local authorities.

Certora continue to work with leading organisations in the UK, including WAMITAB, MPQC, NPORS, EU Skills, IPAF, PASMA and CITB to develop resources that can be used to ensure maximum safety practices are in place. In addition to their core service Certora also provide a Managed Service working with training specialists throughout the UK to support those businesses who have limited resources and systems internally to manage training and competence for all staff across multiple sites.

Certora UK combines over 30 years of experience, knowledge, and proficiency from both the Mentor Training Solutions and the



SERAC businesses to become the go to business for operational training.

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Sustainable Crushing with ROCO



It's fair to say that a successful business is one that is always striving to be more efficient, therefore making the best efforts to improve their bottom line. Efficiency can be easily achieved in many forms, required personnel, transport and indeed the equipment to get the job done.



With costs at an all-time high and the introduction of tough new government fuel laws in 2022 the time has never been more right to make the switch to sustainable electric powered crushing.

Family-owned ROCO have put their 40 years of vast crushing experience to good use over the last 2 years and developed

the very impressive RYDER 1000 Hybrid powered jaw crusher. This first in class 29t diesel electric super-sized permit free RYDER 1000 ticks all the boxes when it comes to size, performance and efficiency. Customers are offered the Dual-Powered build as standard. This means they have the option to power the crusher via fuel or 100% electric mains power.

The RYDER utilises an onboard CAT generator which is unbeatable in the 30t category when it comes to fuel burn. Strenuous tests have been carried out over the last 2 years via Finnings-UK in hard rock quarries to various recycling centres and mixed material applications. The average fuel burn per working hour in Recycling was only 10 litres per hour and an average of just 15 litres per hour in natural virgin aggregates. This is on average a 40% fuel savings in comparison to typical diesel hydraulic driven crushers.

It doesn't end there; customers now have the option to plug the RYDER into their onsite mains electric power supply and no longer burn any fuel whatsoever as the RYDER is 100% electric driven. This in return offers the customer a crusher that not only can now work indoors in a recycling centre but also ideally suited to work on the end of a washing plant for crushing the oversize product with minimal running costs. While using onsite electric supply the business can cut out



daily engine checks, re-fuelling, dust issues / air filters while not burning any fuel and creating a much safer environment for staff to work in that is free from carbon monoxide.

Using electric power also improves the residual value of your crusher dramatically as no hours are being clocked on your engine and with a separate hour meter installed to the crusher you are sure to monitor the plant with ease.

All Roco RYDER 1000 crushers are built with FULL spec as standard so no extra hidden costs or paying extra for the electric plug-in option. The crushing plant also boasts super

advantages over its rivals with its 180-degree radial conveyor which has the option to install a pre-screen mesh to regulate a second product. Furthermore, it has a dual directional powerful overband magnet combined with a very generous 1000mm wide discharge conveyor meaning it is sure to maximise the recovery of steel ferrous metal from your crushed product.

Roco's crushing experience can really be seen when it comes to maintenance and access to all service-related areas. There is a massive 600mm clearance underneath the crushing chamber combined with a deflector plate to cater for Recycled material. The discharge conveyor also lowers down via hydraulic cylinders for any visual or maintenance requirements. Fixed, trouble free hopper with wear liners and 5 cubic metre capacity also means the RYDER is the ideal size for wheel loader or excavator feed.

With a big global push to go Green the time is right to take advantage of the UK's lucrative tax incentives while also avoiding rising fuel costs, more importantly invest in a sustainable crusher that will hold a much better residual value over its less desired hydraulic driven rivals in the years ahead.

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Around the world with MB Crusher

From high peaks to distant islands, MB Crusher's units bring solutions and advantages to any job site

MB Crusher's headquarters is in Italy, in a town less than 100 kilometres from Venice. Here is where the units are designed and manufactured to then be sent all over the world to those who deal with construction, demolition, road work and earthmoving jobs. From the imposing mountains in Tibet to the Cordillera of the Andes, from the Caribbean to Iceland, from snow-covered Siberia to the deserts of Saudi Arabia, it's easy to travel around the world with MB Crusher's units.

We start with high mountains. What makes it difficult to work in these locations? Difficulty to reach the areas, difficulty when transporting materials, it involves expensive costs and workshops are far away.

Hyundai 225, Tibet, Recycling Granite



In Tibet, our customer works in the road construction industry, with a job site at 3800m above sea level, in a remote area with spectacular scenery. Using a BF70.2 crusher bucket, the company crushed road waste, produced material, and reused it as a sub-base for new projects. They obtained logistical and monetary advantages: with MB's excavator crusher, they've eliminated the cost of procuring material for future jobs. Video: <https://vimeo.com/352478263>

Doosan DX225lc, Saudi Arabia, Quarry Rock



On a different continent, we landed on the Andes, in Peru at about 4000 meters from sea level. In a boron quarry, an MB-S18 screening bucket is sifting coarse material from the fine part. The selected material can be processed easily and faster by the quarry plant. Video: <https://vimeo.com/490791674>

Our tour continues towards some islands, although far from each other, they share the same challenges: transportation costs and struggle to obtain materials.

In Iceland, among spectacular landscapes dominated by volcanoes and geysers, the MB-S23 screening bucket installed on Caterpillar 345C was the best tool to select large quantities of basalt and immediately obtain filler material that will be used to help construct a hydroelectric plant.

On the other side of the world, in the Caribbean island of Saint Kitts and Nevis, there are two of MB Crusher's units working on an important redevelopment project in the area. The company in charge of the project needed to renovate the old colonial buildings and rearrange the landscape. The MB-S18 screening bucket was installed on a Caterpillar 320L and separated the dirt from the leaves and twigs: the separated material is reused directly on-site to help maintain the landscape. On the other hand, the BF90.3 crusher bucket is used to crush the Nevis stone, a stone local to the islands and a type of hard granite with volcanic origins. Once crushed, the stone is reused to fill the excavations necessary to construct the buildings and to build the basement for the road network. Video: <https://vimeo.com/472221510>



Iceland, Caterpillar 345 C52, Tonhard rocks, basalt

High transportation expenses and difficulties finding materials accompany our world tour, even on locations where it's normal to have extreme temperatures, affecting the job sites.

Layers of snow as far as the eye can see and thermometers that read -50°C during the day, almost empty roads, mountains, and forests to cross: thanks to MB Crusher, a company in Siberia brought their BF70.2 crusher bucket and their MB-S14 screening bucket without struggling with transportation costs. With the units, they recycled aggregates of different sizes and reused them to maintain the quarry internal haulage roads.

Video: <https://vimeo.com/522331922>

Something similar happened in Saudi Arabia with its $+50^{\circ}\text{C}$ in the summer surrounded by mountainous and desert locations, is where a BF90.3 crusher bucket is working in the most inaccessible places of a quarry a place that is not reachable by traditional vehicles.

Video: <https://vimeo.com/413515078>

Then there are locations where their exports are appreciated, especially when it comes to excellent wine. Our world tour ends with a visit to Italy and France where MB Crusher's units are chosen to dispose of the vineyard posts at the end of the harvest season. A great way to save time on the job site which translates into an economic and environmental advantage. The perfect way to end this journey? But with a glass of wine, of course!

Video: <https://vimeo.com/542537887>

Caterpillar 324, Peru,
Screening stones,
Boron quarry



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Sandvik unveil 3-Series Mobile Impact Crusher

Sandvik Mobile Crushers and Screens is delighted to announce the launch of its new QI353 mid-size impactor, the first of its New 3rd Generation 3-Series products. Designed in response to customer research, the QI353 has been built with more productivity, uptime, efficiency, flexibility, connectivity, and safety at the forefront of its innovative design.

The Sandvik QI353 features a ground-up new mid-size track platform and custom Prisec impact crusher. Targeted at quarry, recycling, and contractor segments, the QI353 is the most versatile, mid-sized mobile impactor available today, designed to provide more uptime than any other.

With the operator in mind, the QI353 offers a user-friendly mobile solution, with controls and maintenance points located conveniently at ground level. A key highlight is the new automated control system featuring Optik™ intuitive user experience. With colour visual display, easy navigation, and total integration for troubleshooting, diagnostics, and support.

More Productivity

The QI353 has been designed with productivity in mind and can process up to 400 mtp/h / 441 stph. Its feed arrangement includes a new feed hopper with curved heavy-duty sides for greater capacity and tapered feed arrangement to reduce blockages and ensure continuous crushing. It also features a new pan feeder with geared drive and a larger pre-screen with improved access to replace media. At the core of the QI353 is a new mid-size Prisec impact crusher, which boasts

the largest feed opening 1170 mm x 730 mm / 46" x 29" and largest rotor diameter 1150 mm / 45" in its class, for higher capacity & greater energy efficiency. Adjustable apron curtains and tip speed ensure a wide range of product gradations can be achieved. Also, all plant conveyors have larger discharge heights for increased stockpiling capacity.



More Uptime

The QI353 features a free-flowing feed arrangement where all components in the flow path through the machine get wider, for improved material flow. A load sensing system for feeder drive, to ensure continuous crushing. A larger pre-screen for effective removal of fines, maximizing throughput and reducing wear. In addition, the QI353 benefits from extended service intervals and larger onboard fuel storage to extend intervals between refuelling.



More Efficiency

The QI353 has been designed to consume less energy, its double-deck pre-screen ensures maximum scalping capability and prevents any undersize material passing through the impactor. This maximizes crusher throughput, reduces wear costs and energy consumption. The machine requires 40% less hydraulic oil per service and benefits from extended hydraulic oil replacement intervals. When combined, this can be up to 64% less hydraulic oil consumed over 10,000hrs of machine usage (subject to oil sampling). The QI353 is also fitted with the latest emissions-compliant power pack for maximum performance and cost efficiency.



More Flexibility

Boasting a high degree of flexibility to suit any application, the QI353 is particularly useful for contractors who change jobs frequently. The natural fines conveyor can be positioned for right- or left-hand discharge with a three-position by-pass chute under the pre-screen allowing you to decide where to send your natural fines. The QI353 comes prepared to accept our new enhanced HS323 hanging screen module, offering the flexibility for the crusher to operate in open or closed circuit.

The HS323 enhancements include; prepared to accept belt scales for TPH monitoring on fines and stockpile conveyor belts, subframe enhanced for improved screen media access and tensioning and an updated mid-size stockpile conveyor. The unique design enables set-up in less than 30 minutes and can be fitted without the use of additional lifting equipment. The patent pending hanging screen option delivers multi-functionality as a 1, 2 or 3-way split screener, as well as a highly productive and efficient impact crusher.

More Connectivity

The new automation system with Optik™ intuitive user experience, includes simplified operation controls and total integration with our My Fleet telematics solution. Diagnostic support, pre-installed guides for troubleshooting and real time information allows customers to know exactly how their equipment is being utilized. One of the new additions to the plant, is the availability of optional belt scales on the QI353. These are fitted to the product conveyor and will enable productivity data to be displayed on the user interface and via My Fleet for TPH monitoring enabling full control of the machines output.

More Safety Features

With operator safety paramount, we have incorporated a new access platform under the feeder & pre-screen and a spacious 3-sided 270-degree platform for service and maintenance. A lifting beam, jib and tackle are provided, as well as the patented rotor turning device to ensure operator safety, when removing, rotating, or installing hammers. A height adjustable overband magnet and all conveyors can be conveniently lowered for inspection and servicing purposes. Enhanced safety features are embedded within Optik™ intuitive user experience, including visual warnings and emergency stop locations.



Summary of key features:

- Pioneering engineering with largest feed opening and largest rotor diameter in its class
- Free flowing feed arrangement to optimize material flow and reduce blockages
- PRISEC crushing technology with the ability to operate in primary or secondary applications
- Standard offering including height-adjustable overband magnet, vibrating pre-screen, underpan feeder, natural fines conveyor, ceramic hammers, and wireless tracking
- Optional HS323 hanging screen module for sizing and stockpiling up to three sized products
- Latest emissions-compliant engine for maximum power delivery and fuel efficiency
- Ease of operation with Optik™ intuitive new control system
- My Fleet remote monitoring of key parameters to help optimize machine operation
- Security+ extended warranty & service package for higher uptime and peace of mind

If you demand more from your crusher, the QI353 will deliver.



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Crushing It - With Rubble Master and Red Knight 6 Ltd

Austrian based Rubble Master are leading the impact crushing world with their range of RM crushers, available from UK distributor Red Knight 6 Ltd. The range is led by the RM120X, delivering maximum efficiency and simplicity for use on a wide range of applications.

The RM120X features a range of solutions to make the life of the operator easier and safer, whilst also delivering cost benefits back to the business through intelligent management of the machine, based on the amount and type of material being crushed.



The RM Operations Assist and RM GO! SMART functions enable the operator to keep track of the machines performance from the excavator cab, with live updates on engine performance, fuel consumption and machines performance all clearly visible via a lighting system on the outside of the machine.

“The Rubble Master impact crushers are industry leading for a reason. Built to the most exacting standards, we’ve sold over 130 machines into the market in the last 5 years and those customers know they can trust the RM range to get the job done. The RM120X is the next evolution in the range. The largest of the impact crushers it also offers simplicity of use, maximum efficiency and safety for the operator via the Operations Assist,” said Paul Donnelly, Managing Director of Red Knight 6 Ltd.

The Rubble Master range are highly mobile, versatile and powerful machines are ideal for crushing natural rock (riverbed material, basalt, limestone, gypsum, granite) and for recycling rubble, asphalt, concrete, glass and production waste.

The range consists of 5 machines, ranging from the RM 60 to the full spec RM120X. The hallmark of all 5 crushers is simplicity and efficiency, meaning short set up times and ease of use, getting RM crushers to work quickly.

Model	Output (material dependent)	Feed material size	Inlet opening	Weight
RM 60	Up to 80 tph	Edge length max 500mm	640 x 550mm	12000kg
RM 70GO!	Up to 150 tph	Edge length max 600mm	760 x 600mm	19500kg
RM 90GO!	Up to 200 tph	Edge length max 650mm	860 x 650mm	23600kg
RM 100GO!	Up to 250 tph	Edge length max 750mm	950 x 700mm	29000kg
RM 120X	Up to 350 tph	Edge length max 850mm	1160 x 820mm	35120kg

For more information visit – www.redknight6.co.uk



High Speed, High Performance with Terex Ecotec's New TBG 530T High Speed Shredder

With an eye on innovation, leading environmental equipment specialist, Terex Ecotec, continue to expand their world class range of mobile equipment with the launch of the eagerly awaited TBG 530T. A robust track mounted high speed shredder, the TBG 530T is ideal for medium scale producers requiring an accurate and consistent end product.

Speaking about the latest innovation, Tony Devlin, Business Lines Director for Terex Ecotec said, "The TBG 530T enhances our high speed shredder offering and allows our product range to further meet operators' needs. Inspired by the successful TBG 630, the TBG 530T has been purposefully engineered to maintain the same key features in a smaller package. Easy to operate with excellent serviceability we are proud to have it in our portfolio and look forward to it dominating the market."

The TBG 530T has been rigorously tested and proven in the field processing a range of different applications in the UK & Ireland. Commenting on its performance Edgar Watt, Engineering Manager for Terex Ecotec said, "We are thoroughly impressed by the consistent performance and throughput of the TBG 530T, a 493HP swinging hammer high speed shredder. Extremely versatile, it excels in many applications and is particularly suited to waste wood processing and green waste shredding. Having worked closely with our dealers and customers we believe we have developed a machine that is right for the market, giving the end users exactly what they require."



Intelligent Shredding

Powered by a 493HP Scania DC13 engine, the TBG 530T has been expertly designed to give operators unrivalled performance, ease of maintenance and superb fuel efficiency. With a rapid set up time the TBG 530T is ready to work in a matter of minutes with no tooling required. The open fronted feeder enables the TBG 530T to be fed quickly and easily from the rear. The intelligently controlled feed system, comprising of heavy duty drag chains and aggressive feed wheel with unique lift/downward assist, ensure optimum material flow resulting in class leading performance.

Robust Rotor

At the heart of the machine is the 1,100mm diameter x 1,490mm wide swinging hammer rotor. This robust, direct drive rotor rotates at 1000 RPM and incorporates 30 up-swinging hammers. A wide selection of hammer designs and interchangeable screens are available allowing the machine to be configured to suit the ever-changing product requirements. The TBG 530T also benefits from the added protection of a screen kickback system. Should an unshreddable object enter the shredding chamber the screen will release allowing the material to quickly pass through, reducing the risk of accidental damage.





Processed material is removed from the machine via a modular product conveyor with an impressive discharge height of 4.6m. This conveyor also lowers to ground level for inspection and maintenance. An optional overband magnet with hydraulic height adjustment can be fitted to remove ferrous metal from the product.

Unrivalled Service Access

Whether performing daily checks or carrying out maintenance, the TBG 530T offers unrivalled service access to all key areas of the machine. The electric/hydraulic raise/lower of the screen and interlocked chamber access door allow the rotor and anvil to be inspected with ease. Designed with the operator in mind, the TBG 530T offers the perfect blend of performance, efficiency and serviceability.

Telematics

The TBG 530T is fitted as standard with the industry leading T-Link telematics solution designed to improve productivity, efficiency and profitability for the customer. T-Link is a remote monitoring, fleet management system that combines the machines' inbuilt CANbus control system with satellite positioning and telematics software. Available online anywhere and at any-time, T-Link provides instant access to key data including comprehensive information on GPS location, start and stop times, fuel consumption, operating hours, maintenance status and much more. Analysing this data can improve machine operation, increase uptime and allow in-depth reporting and fleet management.

World Class Manufacturing & Distribution

Manufacturing of this latest high speed shredder will take place at Terex Campsie, a dedicated state of the art facility which will support the ongoing growth and development of Terex Ecotec's ever-expanding product portfolio. The TBG 530T is available to purchase now via Terex Ecotec's world class dealer distribution network that provide the sales and aftermarket service demanded for in the market. Sales Director for Terex Ecotec, Pawel Kononczuk commented, "The reaction received to the TBG 530T from our dealer network has been fantastic, with numerous orders already secured. Having had the opportunity to see first-hand the machines' capabilities they fully appreciate the benefits it will bring to businesses."

The addition of the TBG 530T will further enhance an already significant portfolio of products offered by Terex Ecotec and demonstrates their continued passion and commitment for new product development and innovation, positioning them at the forefront of the recycling market.

To learn more about the New TBG 530T and to locate your nearest dealer visit www.terex.com/ecotec



PowerX Equipment increase the processing power for the CEMEX Dove Holes crushing operation

Situated in Derbyshire close to the Peak District, Dove Holes is CEMEX's largest quarry and provides aggregates for construction projects all over the country.

The Dove Holes operation is continually striving to be more efficient and sustainable with nearly 50% of the aggregate transported by rail to major markets such as Leeds, Sheffield, Manchester, London and Birmingham.

Contract crushing:

With increasing demand for aggregate, in March 2021 the CEMEX Dove Holes team engaged the expertise of PowerX Equipment under a crushing contract to increase their output to satisfy this surge in demand.

PowerX Equipment proposed the ideal combination of three machines; a Powerscreen® Trakpactor 550 Impact Crusher, a Powerscreen® Chieftain 2200 Screener and a Powerscreen® Maxtrak 1000 Cone Crusher which working together process the single size limestone at the required output. Operation is simple with the as-dug material loaded by shovel into the hopper of the Trakpactor 550 which in turn feeds the Chieftain 2200 which stockpiles 2 sizes and recirculates the +20mm oversize directly back into the Maxtrak 1000 which after crushing it again, feeds it back into the Chieftain for further stockpiling.

Neil Plant, the Primary Manager at Dove Holes is responsible for overburden removal, drilling and blasting, primary and contract crushing, took up the story, "The proposal from PowerX Equipment ticked all the boxes on price and we were very happy with the Powerscreen® equipment that has been supplied. Since the start of the contract, we have been delighted in the performance of the equipment and the support we have received from PowerX."

World- beating Powerscreen® equipment:

With the combination of machines employed at Dove Holes the whole operation is finely tuned to producing the maximum output of saleable sized aggregate at a high production rate.

Trakpactor 550 Impact Crusher:

With the as-dug material being fed into the large hopper of the primary crusher in the line the Powerscreen® Trakpactor 550 Impactor is an ideal crusher for processing soft to medium-hard primary materials like limestone.

Material is fed into the large feed hopper which is common on both the vibrating grizzly feeder & live pre-screen versions, both of which feature a selectable crusher bypass facility & optional fines discharge conveyor. With up to 500tph of output potential, load sensing, ensures the wide crusher inlet opening receives a continuous feed of pre-screened material, avoiding unnecessary crusher wear.

The Powerscreen® Trakpactor 550's robust impact chamber features a twin apron, four bar rotor design, with hydraulic release aprons, hydraulic setting adjustment, hydraulic crusher overload & is driven directly off the engine via clutch for optimum fuel economy.

Powerscreen® Chieftain 2200 Screener:

At the centre of the screening operation at Dove Holes the Powerscreen® Chieftain 2200 2 Deck Screen processes large volumes of high specification products with maximum versatility. The Powerscreen® Chieftain 2200 has two highly versatile double-deck screen boxes which provide a total screening area of 19.5m². It has a revolutionary patent pending drive system which allows switching between 2 and 4 bearing with bolt-on parts. The maximum variability of the Chieftain offers improved capabilities over its class rivals, especially in sticky scalping applications. User benefits include a quick set-up time (typically under 30 minutes) with hydraulically folding conveyors and track mobility. Its high aggression screen boxes, manage dirty, sticky material with ease.



Crushing & Screening



Powerscreen® Maxtrak 1000 Cone Crusher:

At the heart of the recirculation of the oversize material is the high performance Powerscreen® 1000 Maxtrak cone crusher, a machine that has been designed for direct feed applications without pre-screening on clean rock. At the heart of the Maxtrak is the Automax cone crusher with hydraulic setting, tramp release, and unblocking system. Its unique crushing action provides excellent capacity, high reduction, and excellent product cubicity for the production of high-quality aggregate and sub-base materials.

Luke Talbot – MD of PowerX, commented, “Teamwork with the customer, in this case CEMEX, is vital in ensuring that needs are met at the Dove Holes operation. We will always, where possible adapt to meet changes in a processing situation. To date it’s been a total success what has been achieved so far with the machine line-up of world beating TEREX® Powerscreen equipment.”

A successful portfolio of crushing contracts:

The PowerX Equipment team have a huge successful portfolio of contract crushing over many years and have successfully completed contracts up to 10-years long and notably achieved landmark processing in the construction of the Aberdeen bypass where the team processed in excess of four million tonnes of granite.

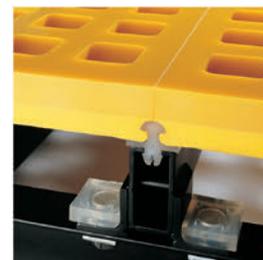
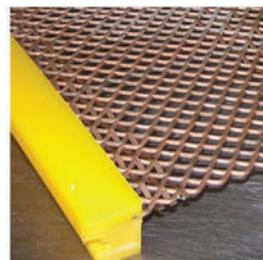
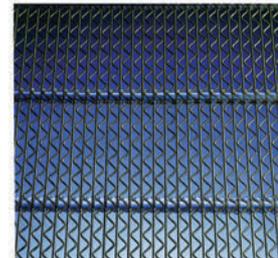
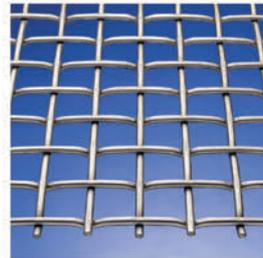
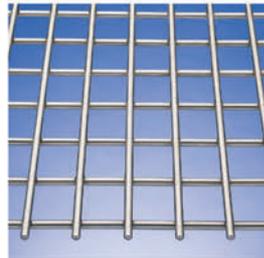
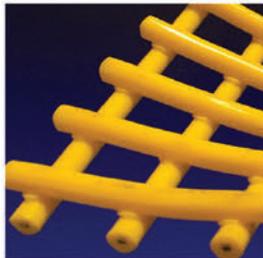
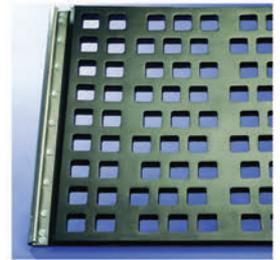
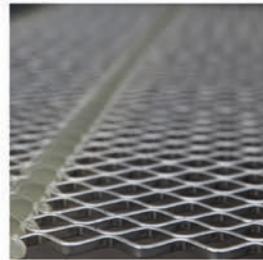
Conservation high on the agenda:

The 500 hectares Dove Holes site plays a major part in conservation, as the surrounding grassland around the quarry area is a key area for the rare Twite bird. This species has been categorised as high conservation importance and a priority UK BAP (Biodiversity Action Plan) species. The grassland helps provide the seed food needed by the Twite, which has been seen nesting in cracks of an old quarry face. CEMEX is constantly working with the RSPB to help manage and restore its sites, giving nature a home.



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Hercules HT212 Trommel is getting Norwegian rock 'sorted'

Stelix Engineering Ltd, the world's only manufacturer and supplier of the original 'Hercules' range of heavy duty trommel screens are pleased to have added to their machines operating in Norway.

The model HT212 was chosen due to its heavy duty features when working with a very abrasive feed material and for processing large rock sizes at high hourly rates.

The HT212 is rated up to 750 mtpd and can accept a maximum lump size of 1050mm direct from a dump truck. The heavy duty feed hopper is fully lined with wear-resistant steel plates.

The customer requires specific weights of rocks to be screened from the trommel barrel and this required the barrel to be designed specifically to suit these parameters while maximising the 'open area' of the screening surface. The valuable experience gained over many years means that the barrel is now lasting longer than ever.

A chute is fitted under the first half of the barrel that feeds the fines to a conveyor and away for further processing.

Chutes are fitted under the second half of the 8m-long barrel for separating the different product sizes ready for collection from bins on each side of the trommel.

The purpose-built power unit for the trommel allows the barrel rotation speed and feeder stroke rate to be changed very quickly and easily from the touch-screen panel. These parameters can be changed to suit the feed material characteristics and the weather conditions at different times of the year. The standard 20' container used for the power unit provides a safe and lockable housing for the motors, pumps and associated hydraulic and electrical equipment.



The modular design of the trommel allows for simple installation and allows the trommel to be running very quickly after delivery to site from the company's own factory based in the UK.

It would not have been possible to carry out this project with any other screening method than the trommel based on the large feed size, high tonnage rates required and large product sizes required. This is even more evident with project sizes containing high quantities of clay/contamination.

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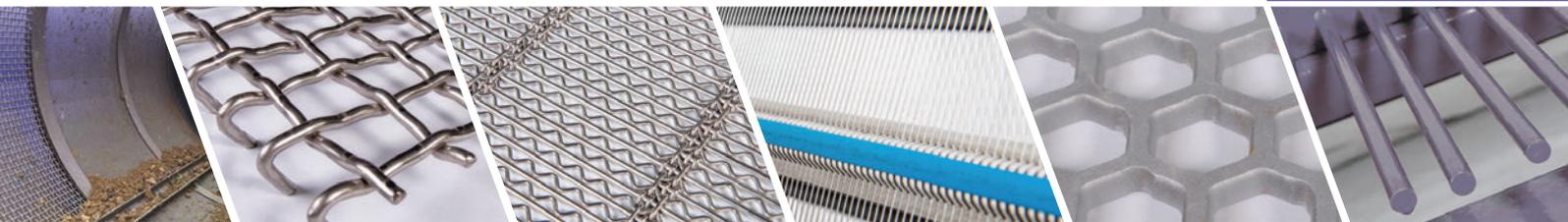
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Jaw Crushers

One of the best-known and well-respected Jaw Crushers in the world is the McCloskey J40. With its heavy duty cheekplate design, 40" wide jaw and user-friendly control panel, the J40 offers high-throughput in a highly portable package – just 2.5m wide. The performance of this machine has been proven in multiple applications the world over.

The J40's big brother, the J45, is equally popular, offering the same benefits in a larger, higher capacity package. With an optional recirculation system, the J45R can produce a crushed and screened final product.

For those requiring maximum productivity, McCloskey Equipment offers the J50, which boasts the widest jaw it is class, at 50" x 29". Key to the J50's performance is its jaw speed, which leads to better reduction and material being processed faster through the crushing chamber.

Cone Crushers

McCloskey offers three Cone Crushers, the C2, C3 and C4. The C2 Cone Crusher immediately distinguishes itself with a full complement of features including an anti-spin system, load and material level monitoring, fully hydraulic push button CSS adjust and full hydraulic relief system. Also available as recirculating model, featuring a 5x10 High Energy Screenbox, the C2 and C2R are designed to produce cubical chip from 3/8" to 5" in size, with production rates up to 300TPH.

With a larger 44" cone, the McCloskey C3 and C3R offer high material capacity and throughput with large stockpile

capacity. Both machines offer a high degree of control over the final product, with the C3R also featuring a 6x14 High Energy Screenbox.

McCloskey's largest Cone Crusher, the C4, combines a 52" cone with a 612hp power unit. It is designed for the most abrasive and toughest materials in aggregates, mining and C&D recycling, delivering high production and large stockpiling capacity with unrivalled reduction ratios.

Impact Crushers

Completing McCloskey's Crusher line up is the Impact Crusher range, a comprehensive offer which includes the I34, I44, I54 and the new I4C.

McCloskey's I44v3, available with recirculation (I44R) and as a heavy-duty option (I44v3HDR) for the toughest projects, is the ideal solution for asphalt recycling, concrete recycling, rock crushing, construction and demolition.

The I54, McCloskey's largest Impact Crusher, is designed for durability, power and ease of use, with a range of blow bar material options. Features include an independently vibrating, double-deck grizzly pre-screen, which removes more fine material in advance of the crushing chamber, increasing capacity and reducing wear.

McCloskey recently enhanced their Impact range with the introduction of the new I4C Impact Crusher. This new machine brought the productivity of an 1125mm (44.3") Impactor to a compact footprint, offering maximum power with enhanced manoeuvrability. >



Screeners

With the largest screening areas in their respective classes, McCloskey's S-Series, R-Series and Trommel screeners are designed for high output and durability, even in the most demanding conditions, delivering high production across industries.

McCloskey S-Series Screeners

McCloskey's S-Series Screener range – comprising of the S130, S190 and S250 – is renowned globally for its screening capabilities and production capacities. All models include an aggressive High Energy Screenbox, in double or triple deck formation, and fast screen changes, to deliver optimal screen coverage.

The S130 offers the S-Series' class-leading features in a unique size, designed to meet demands of operators who require significantly more screening capacity than a 10' or 11' Screenbox. In triple deck formation, the S130's production capacity is comparable to larger models, despite the far more cost-effective price.

The S190 is one of the most advanced and innovative 20' x 5' mobile vibratory screening plant in production today. With an adjustable screenbox angle, it is used across a wide range of material applications including quarrying, mining, sand and gravel, coal screening, topsoil, and woodchip.

As one of the world's largest tracked mobile screeners, the McCloskey S250 offers class leading screening area, with a 22 x 6 heavy-duty, High-Energy double or triple deck Screenbox. With 900mm wide side conveyors and an 800mm wide oversize conveyor for higher material flow, the S250 is, for many, the ultimate choice in aggregate material screening.



McCloskey R-Series Screeners

Comprising of the R70, R105, R155 and R230, the McCloskey R-Series is one of the most robust, durable and powerful heavy-duty mobile screener ranges at work around the world today. All models are built around McCloskey International's highly productive High Energy Screenbox, offering operators class leading features, such as high-quality components, durability and reliability.



The R155 is one of the most versatile models in the range, a tough, robust screening tool designed to cope with the heaviest of applications. Available in several configurations, the performance of the 155 ft² High Energy Screenbox – the largest in its class – is proven the world over, taking some of the worst, untreated construction and demolition waste to provide clean end products.



Designed to provide uncompromising production levels to scalping operations, the McCloskey R230 can operate as a stand-alone plant producing finished product, or as a primary scalping component to the very largest of portable crushing spreads.

Trommels

With over 35 years' experience, McCloskey is the world's leading trommel manufacturer, having pioneered trommel design and innovation from the company's inception. The range, which includes the 512, 516 and 621, offers high production rates, versatility, ease of use and unrivalled strength.

With a 127ft² screening area, the McCloskey 512 delivers high site-to-site and on-site mobility, maximising production in every operational location.

McCloskey's 516 trommel offers a larger 190ft² screening area with a range of drum designs and screen sizes to improve quality and meet high demand. Three screen sections allow for flexibility in sizing to maximize productivity, with material spending more time in the sixteen-foot drum for better screening results. For heavy duty applications, an optional remote control hydraulic tipping grizzly can be added to scalp off large material.

Large screening applications, including construction and demolition, topsoil, compost, waste recycling, call for McCloskey's 621 Trommel, which offers numerous options to tailor the machine to each customer's unique requirements.

Mobile Rinsers

Also available from McCloskey Equipment is the MWS Equipment Mobile Rinser range. These Mobile Washing Units, available in two sizes, are extremely adaptable; easily converted to dry screening mode across two or three decks, one machine can produce up to four grades of aggregates and two grades of sand.

Compact Solutions

McCloskey also offers a range of compact solutions, which embody the performance of larger machines in highly manoeuvrable, easily transportable packages.

The J35, for example, retains the high throughput capabilities of the larger Jaw Crushers, but in a compact, mobile design, suited particularly to construction and demolition recycling, asphalt recycling, and aggregates. It is also available with a recirculating system, the J35R.

Similarly, the I34 (and I34R) Impactor is the perfect solution for projects with small footprints but big requirements. Easily transported between sites and able to nimbly move around in tight spaces, the small footprint of the I34 and I34R is uniquely suited to the recycling, demolition and smaller scale construction projects.



Meanwhile the McCloskey R70 Screener embodies all the features and benefits of the R-Series in an easily transportable package. Using the same high-quality components and innovative High Energy Screenbox as its larger siblings, the R70 is aimed at contractors with large numbers of smaller heavy-duty construction, demolition, and remediation projects.

Complete offer

McCloskey's Crusher and Screener range is comprehensive, with solutions for every application and size project, from multiple small sites, to the largest of quarry operations. Combined with the total support from McCloskey Equipment, which offers new machine sales, spare and wear parts, and total service, both on site and from its bespoke workshops in Oxfordshire, McCloskey Equipment has established itself as the go-to supplier for Crushing and Screening equipment.

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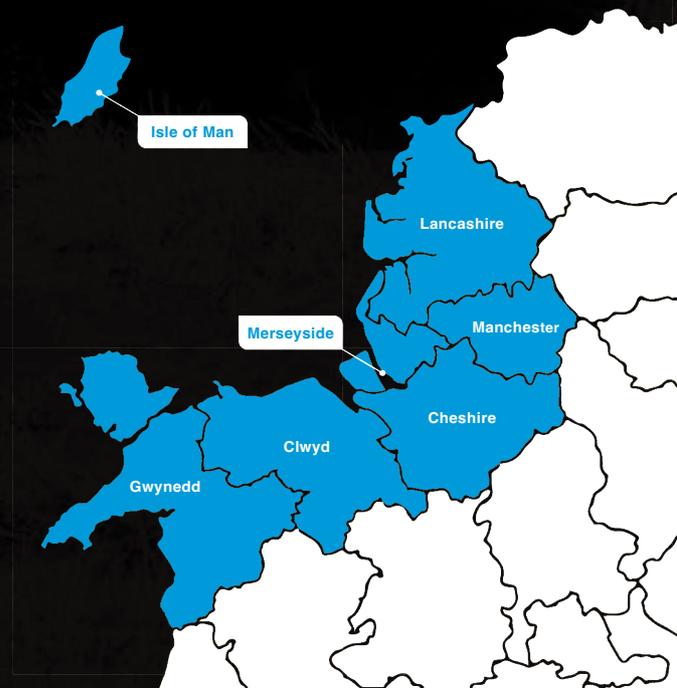


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Enjoy unrivalled production rates with the new EDGE TRM831 wheeled mounted trommel

EDGE Innovate has revealed their largest mobile trommel to date with the launch of the new TRM831 at America's leading compost conference organised by the US Compost Council. EDGE's newest offering will be one of the largest wheel mounted trommels on the market and will provide operators with unrivalled production rates. With extensive stockpiling capabilities thanks to its end discharge conveyor design, the TRM831 design prevents product cross-contamination and reduces the double handling of material. This is complimented by a remote operated, 180° radial fines conveyor which has the capacity to stockpile up to 1030m³ (1347yrd³).

The EDGE TRM831 portable trommel is ideal for the high-capacity screening of various applications including topsoil, compost, sand, household waste and construction and demolition waste. With a wide range of different drum types and screening media available, the EDGE TRM831 can be customised to suit the customer's exact application requirements.

DESIGN FEATURES

The EDGE TRM831 incorporates a host of impressive design features such as, a remote 180° radial fines conveyor as standard, an eco-power saving functionality which reduces unnecessary running costs and a user-friendly HMI control panel for the easy adjustment of machine parameters.

With an impressive screening area of 57m² (613.5yds²), the EDGE TRM831 is fitted with a variable speed 2.3m X 9.3m (8'X31') long screening drum, powered via an efficient hydrostatic drive system. Screening efficiency is ensured thanks to a 9.3m (31ft) long drum with hydraulically adjustable drum cleaning brushes.

High production rates offered by the TRM831 is maintained thanks to EDGE's intelligent load management system which prevents drum overload and ensures that the trommel screen is always operating at optimum performance with minimal supervision. Enhanced trommel screening results are achieved thanks to a variable drum screening angle.

Offering the largest hopper capacity in its class, the EDGE TRM831 encompasses a 1500mm (60") wide, variable speed feed conveyor complete with load sensing and automatic feeder shut down to ensure maximum uptime. Additional hopper options include a reject grid and a two-deck vibrating screen for the pre-treatment of the feed material.

EDGE's HMI control panel with its intuitive operating system allows for sequential start up and the customisation of operating parameters which ensures the EDGE TRM831 runs at optimum capacity across all applications.



OPERATIONAL FEATURES

Utilising the latest engine technology, the EDGE TRM831 is powered via a 188HP (140kw) Caterpillar C4.4 Tier 4 Final / STAGE V engine, resulting in extremely low engine and noise emissions. Further fuel savings are made possible thanks to EDGE's unique Eco-Power Saving Mode which automatically reduces engine speed to idle when not processing material for a set period. For enhanced savings and zero emissions, the EDGE TRM831 is also available with a direct electric power source configuration.

The TRM831 discharges fines material via a radial fines conveyor with a discharge height of up to 6m (19'8"). With a 180° radial functionality as standard, the radial fines conveyor facilitates the creation of impressive stockpiles and reduces the double handling of material by up to 75%.

A wireless remote with an operating distance of up to 100m (328') gives the operator control over engine and feeder speed, screening angle, tipping grid cycles and full control of the radial fines conveyor including radial functionality and discharge height adjustment.

The EDGE TRM831 is designed to ensure operational ease and quick maintenance access. Thanks to a large canopy and uplifting drum bin doors, easy access is provided to the power unit and trommel drum for essential maintenance. A quick drum exchange is facilitated via a hydraulic sliding feeder and hydraulic raising drum cleaning brushes. This allows operators to simply lift out the existing drum to be replaced with the various drum types available.

EDGE's largest wheel mounted trommel is fitted with a tri-axle bogie complete with fifth wheel hook-up and air brakes. Transportation between sites is exceptionally easy with redeployment taking a matter of minutes thanks to hydraulic folding discharge conveyors and chassis jacks.

With unrivalled production rates, intelligent load management and extensive stockpiling capacities; the EDGE TRM831 is your perfect screening partner.

Further information on EDGE Innovate's latest product offering can be found by visiting www.edgeinnovate.com



New Powerscreen Titan Range packs a big punch

Powerscreen, the world's leading provider of mobile crushing and screening equipment, has launched its new Titan range, a new range of secondary scalping screens that provide a cost-effective solution in high volume, smaller sized, or recycling applications.

The Titan range, which includes three models—the Titan 600, Titan 1300, and Titan 2300—is a simplification of Powerscreen's high-performing Warrior range, using key features customers love about the Warrior machines and tailoring them to a different section of the market at an attractive price point.

Sean Loughran, Business Line Director of Powerscreen explains, "As we continue to review the global market, we are seeing a split in the applications in which our Warrior range is being used. While some are screening large sized materials, others are being utilised as secondary scalpers, such as after a crusher, or in the recycling market—screening topsoil, C&D waste, and biomass materials. The Titan range has been specifically designed for the customer as a more cost-effective machine to cater for those secondary or recycling screening applications. It has both a range of features and unrivalled performance that will increase the bottom line of any of its owners."

Titan 1300

The Titan 1300 packs a punch while having a compact footprint for ease of transport. Comprising an extra-large capacity twin drive feeder at the rear of the machine with an 1100mm feeder belt, the feeder comes with hydraulically folding extensions to allow for side loading of the machine, can withstand heavy loads due to having impact bars under the belt in place of impact rollers, and has a folding rear door to allow for maximum versatility.

The highly aggressive screenbox has an impressive total screening area of 10m² or 13.1yd². Complete with a variable angle to allow for tailoring of the machine to various applications, the screen also has a lift-up functionality at discharge to ensure quick and efficient mesh changes, of which there is a huge range available as well as other media including punch plate, 3D punch plate and finger screen.

Powerscreen Titan 1300



Powerscreen Titan 1300



Side conveyors have wide fines belts and excellent stockpiling height to rival any other comparable machine on the market. A single lever set up results in a very quick set up time, and while the side conveyors can be configured as either standard or fully reverse from the factory, they can also be fully configured onsite to allow both conveyors out of the same side of the machine. Each conveyor has its own independent speed control, to tailor each conveyor to its loading. Meanwhile, the Titan 1300's tail conveyor has the optimum combination of rollers and impact slips for durability while maximising the power draw of the machine, and has a fold to minimise transport length, fitting onto the smallest of European trailers.

Titan 2300

The Titan 2300 is a completely new machine to Powerscreen in terms of concept and design, encompassing the largest belt feeder in any of the Powerscreen range at 1500mm (60"), with twin gear box drive and a combination of impact bars and impact rollers for optimum power usage. It also has the steepest hopper ever designed by Powerscreen to enable ease of emptying without bridging, with an eye specifically on the recycling market. The body of the hopper is manufactured with wear resistant steel and a rear folding door to take a crusher feed. A low-speed feeder is fitted as standard, with a

medium speed option for low density material which, while sacrificing some torque, can run at up to 50% faster than standard.

As with all Powerscreen screens, the heart of the machine is within the screenbox itself. Neil Robinson, Product and Applications Manager, Powerscreen explains, "Using our expertise gained from our last few projects such as the Warrior 2100, the Chieftain 2200 and the Chieftain 1700X, together with a mix of computer-based design and analysis and real-world testing, we have crafted a screenbox that will match and exceed any similar sized single shaft screen in the market. Using a high specification drive, the machine is able to take on a wide range of applications from smaller direct feeder, secondary feed after a crusher to light weight recycling market."

The machine also has an adjustable screen angle, with media options include mesh (both woven and welded), punch plate, 3D punch plate, finger screens and finger and punch plate combination. Finally, the Titan 2300 has full access walkways down both sides of the screenbox, uniquely designed to be fully regulatory compliant.

Hybrid Dual Power is also available on the Titan 2300, powered using standard diesel or connected to an external electricity supply once the machine has been set-up.

The side conveyors are standardised at 1050mm (42") plain belts, with chevron belts also available if required. With a generous stockpiling height, the plant is fully customisable both in the field and from the factory with conveyors that can be reversed, can be discharged on the same side, or can be converted to a two-way split. To cater for the recycling market, there is an option for magnetic head drums on all three conveyors to carry the metallic material back down the conveyor and away from the stockpile. The tail conveyor features a 1600mm chevron belt, the widest in the Powerscreen range, with a combination of impact slips and rollers as standard to remove the need for full length skirting and reduce the power draw of the conveyor.

Similar to the Titan 1300, the large tracks of the Titan 2300 ensure a stable working platform but has a high tracking speed to allow highest versatility onsite.

Testing

Both the Titan 1300 and Titan 2300 have undergone rigorous testing in various applications to ensure that they excel in every job. The Titan 1300 has worked on a sand and gravel application in Germany, while the Titan 2300 has surpassed expectations in various quarries throughout Ireland as well as in a biomass application. Sean Keenan, Applications Training Manger said, "Overall it's fair to say that our customers have seen the Titan machines enabling them to process higher volume of quality material when compared to their previous units."

The Titan is available to order now from your local dealer. To learn more visit www.powerscreen.com or find the crushing and screening experts in your area to talk about options available to you: www.powerscreen.com/en/find-a-dealer



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- Easy access to shredding area.
- Auto standby control.
- Hydraulically adjustable overband magnet.
- Water damping system ecospray.



British recycling company relies on plant technology from BHS-Sonthofen

Recycling company in United Kingdom processes ASR fractions and electronic scrap using the BHS Rotorshredder ...

British recycling specialists Recycling Lives commissioned a recycling plant that was planned and implemented by BHS-Sonthofen. The plant is designed to handle a variety of materials such as automotive shredder residue (ASR), electric and electronic scrap (WEEE) as well as so-called "meatballs" (electric motors and motor armatures). The process developed together with the company is based on a profitability analysis and ensures marketable end products.

In the process of expanding capacities, the British recycling company Recycling Lives decided it required a plant that could process different materials simultaneously at its 15-acre Recycling Park in Preston. These included ASR, waste electrical and electronic equipment (WEEE), metal composites and meatballs. After BHS had drawn up an initial concept for a plant, extensive tests were carried out at the Sonthofen test center with about two to three metric tons of each material required by the customer.

BHS calculated profitability after tests in the test center

Customers of BHS-Sonthofen need a validated basis for decision-making before they invest in a new plant. Data on throughput and material quality, among other parameters, is collected during the tests and analyses in the test center. This information is then used to create a mass balance a profitability analysis— a key advantage for customers. The recycling company used the calculation to estimate the profitability of the plant investment."

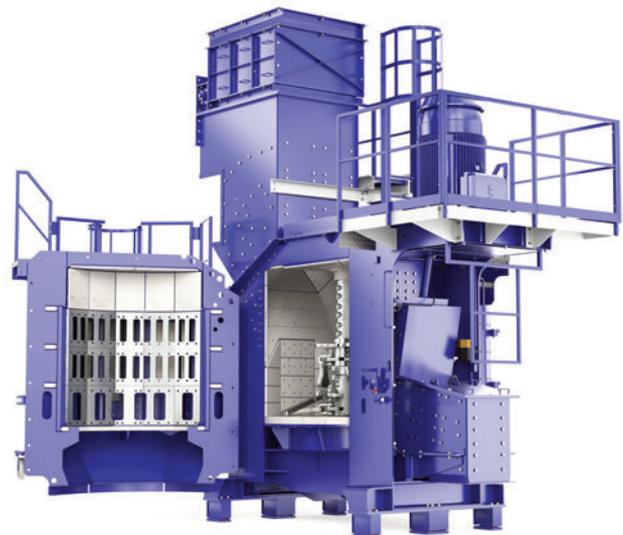
Accordingly, the experts from BHS designed the plant based on the test data. The feed material is supplied to the Rotorshredder of type RS 3218 via a feeder. The tools of the Rotorshredder exert a very intense stress on the feed material through impact, shock and shearing forces. The result is selective size shredding: Particle sizes are selectively reduced and composite materials are separated. All fine fractions of particle sizes smaller than 25 mm are processed on other existing plants. The fraction >25 mm is conveyed to a zigzag sifter, which frees the feed material from light material (fluff, films, fibers, dust, etc.).

The cleaned material is then transported via an overhead magnet to a cyclone separator, which was included in the order to BHS. In the overall control concept BHS took these assemblies into account and also supplied the steel structures for these parts of the plant. The process, which was developed by BHS together with the British customer, produces market-ready end products.

Recycling Lives' Chief Engineer Gary Halpin explained: "Since the machine was installed three years ago downstream from our main shredder at the Recycling Park in Preston, it has proved efficient in further reducing the particulate size for more efficient extraction of metals and other materials from the waste stream. It is a valuable element within our waste processing operation, helping to extract maximum value and also increase the amount of material that can be recycled as we progress towards a circular economy solution."



The recycling plant in the UK for processing automotive shredder residue (ASR) and electric and electronic scrap (WEEE) was still under construction here. It was planned and implemented by BHS-Sonthofen.



The Rotorshredder of type RS 3218 is the centerpiece of the plant.



The tools of the Rotorshredder exert a very intense stress on the feed material through impact, shock and shearing forces.

Kiely Bros investment in CDE technology opens circular economy pathway

Birmingham-based company now diverting 80% of waste from landfill

The UK's largest provider of surface dressing and microsurfacing, Kiely Bros, has achieved a significant enhancement to its operations with by investing in a 30tph trommel fines recycling plant from industry experts CDE.

The Birmingham-based company was established in the late 1950's and originally specialised solely in surface dressing, operating within the West Midlands area. The company has since expanded and now operates throughout England, Scotland and Wales, completing approximately 15 million square metres of surface dressing and microsurfacing each year.

Prior to this latest investment, the company worked with CDE to install a mobile grit washing plant, with the initial development of the CDE FreeFlow in 2012. The relationship between CDE and Kiely Bros has remained strong and led to the specialist contractor once again utilising CDE's expert knowledge in advanced wet processing technology to enhance its current operations.

The company processes skip waste through a dry recycling system and picking station to recover materials and divert them from landfill. Trommel fines, however, are residue waste that result from this process which cannot be treated effectively in such a process.

Produced as part of the recycling process, trommel fines consist of materials such as stones, aggregates and glass; they have traditionally been treated as an inert product and sent to landfill. However, trommel fines also contain materials such as fibre, films, rigid plastics, organics, wood, metal and textiles.

Kiely Bros skip waste recycling facility produces over 600 tonnes of trommel fines waste per week. The company was intent on reducing the volume of waste sent to landfill, to obtain a more sustainable future for their business and engaged CDE to achieve their goal.

After the briefing process and analysis of raw feed material, CDE commissioned a full trommel fines recycling plant, including its AggMax logwasher, EvoWash sand washing fine material classification plant, CFCU 70 density separator, CO:FLO™ advanced liquids/solids separation system, ProGrade Sizing Screen and AquaCycle thickener.

Turnkey processing systems from CDE provide maximum recycling potential and full water treatment achieving considerable reduction in waste to landfill. The business case to recover materials from trommel fines is also attractive as trommel fines attract the higher rate of Landfill Tax, with a Loss of Ignition (LOI) of more than 10%. The CDE plant includes a CFCU which uses

density separation to remove fibrous, organic and polystyrene materials which have a high LOI content, once these materials are removed a high quality finished sand product. The savings can equate to around £90 per tonne.

Sending trommel fines to landfill not only results in a considerable cost for waste operators but also does not align to the United Nations Sustainable Development Goals (SDGs) and drive to create a circular economy.

Since commissioning, the plant has diverted over 80% of the companies trommel fines waste from landfill. By washing the inert materials to remove contamination, clean sand and aggregates extracted from the trommel fines waste can be resold and reused in the secondary aggregates market to close the loop on waste, contributing to a circular economy and also opening new revenue streams for the company to ensure swift return on investment.

Jim Conlon, Quality and Technical Services Manager at Kiely Bros, said, "Our company was producing trommel fines waste at a rate that, for us, was no longer acceptable without a sustainable solution for our outputs.

"When we initially approached CDE, we asked what could be done with this material. They conducted thorough analysis to unearth what could be recovered from the material stream, whether it was commercially viable, and confirmed to us there was a great percentage of secondary aggregate."

Since commissioning, the plant has already proven its effectiveness.

Mr Conlon added "To think that this investment has reduced the volume of material going to landfill by 80% is incredible. It is not only helping us achieve our sustainability goals, but creating a sellable product opens new commercial opportunities and creates our pathway to a circular economy."

Matthew Bunting, Business Development Director at CDE, said, "We have worked very closely with Kiely Bros throughout this process to design a system specific to their site and their material stream. To this day we support them with plant optimization and operator training through our CustomCare aftercare on an ongoing basis."

"Kielys have been a delight to work with. They're very dynamic and very forward thinking, passionate about their environment and passionate about innovation.

Bunting adds, "With ever increasing legislation around qualifying fines, recycling has to be the way forward for trommel fines. At CDE we are excited about the impact our proven technology can have on the trommel fines waste problem.





WEEE plastic recycling innovator expands Preston site

Disruptive plastic recycler 3R Technology is gearing up for further growth in 2022, as the ambitious scrap handler invests in new technology to bolster its UK operations.

With more than 20 years' experience - particularly in the Belgian market - attention recently turned to the UK and the WEEE plastic processing challenge.

Approximately 2,000 tonnes of shredded small domestic appliance (SDA) plastics are now being handled by the team every month, at their 5000m² warehouse in Preston.

Two UNTHA shredders lie at the heart of the cutting-edge plant. A single shaft UNTHA LRK plastic shredder processes PS fridge plastics, and a four shaft UNTHA RS40 with screen achieves a refined 30mm fraction after processing SDA mix. Particle homogeneity is ensured by both machines.

The post-shredded plastic is then transported via conveyor belt to the washing line with floating tank, to be cleaned and dried. ABS/PS and PP/PE material is then run through an electrostatic separator to create pure, high value ABS and PS flakes for remanufacturing.

But having rigorously tested the state-of-the-art processing line, 3R Technology is on the hunt for more material heading into next year and beyond, with the site capable of recycling various plastics, including flat-screen TV cases, computer monitor housings, and computer based peripherals.

The goal is to reach an annual processing milestone in excess of 5,000 tonnes in 12 months' time, with plans to open two further plants in the South of England and Scotland, in the near future.

"The UK's WEEE recycling capabilities are continuously improving," explained 3R Technology's founder and CEO Yu Lin Wang. "However, the focus is usually the processing of metallic content.



"We're therefore partnering with WEEE and scrap metal handlers, to tackle the 50% mixed plastic that typically remains once redundant appliances have been shredded. This still has a significant resource value, which often isn't realised in the UK.

This is not 3R Technology's first UNTHA investment.

"We use UNTHA at our Dutch plant too," elaborated Mr Wang. "So, when it came to selecting the processing machinery for our UK facility - equipment that is easy to use, simple to maintain, and has an impressive capacity - we knew where to go.

"UNTHA shredders make the job of our downstream technology so much easier - we're able to segregate a further 3-5% clean metal from the floating table which boosts our revenue stream. Our site is attracting a lot of attention, particularly on social media, so we'll continue to be very vocal when it comes to what we can do. We even encourage people to come and take a look!"

3R Technology also has WEEE recycling facilities in Serbia and The Netherlands.

Metal recovery from aluminium dross

An aluminium dross processing plant in the Middle East has purchased an Eddy Current Separator, Drum Magnet and ElectroStatic Separator to recover the valuable metal. The separation equipment was designed and built by Bunting at their Redditch manufacturing facility in the United Kingdom.

Bunting is one of the world's leading designers and manufacturers of magnetic separators for the recycling and waste industries. The Bunting European manufacturing facilities are in Redditch, just outside Birmingham, and Berkhamsted, both in the United Kingdom.



Bunting's Metal Separation Module

Controlled Tests of Aluminium Dross Samples

Aluminium dross is a byproduct of the aluminium smelting process. After crushing, mechanical separation enables the recovery of residual aluminium from the aluminium oxide. The first stage of the project involved Bunting conducting controlled material separation tests on three samples at their Customer Experience Centre in the UK. Each sample had different particle size ranges. The tests, undertaken on a range of laboratory-scale separators, confirmed the amount of aluminium that could be recovered by using three different types of equipment.

The test concluded that a three-stage separation process effectively recovered the metal from the dross. The first stage of separation focused on removing magnetic particles with a high-intensity Rare Earth Drum Magnet. Magnetics accounted for approximately 1%. Removing the magnetics is beneficial to subsequent processing.

The Rare Earth Drum has a stationary permanent magnetic element mounted within a rotating non-metallic shell. A vibratory feeder delivers an even and controlled flow of material onto the shell and into the magnetic field. Magnetic particles are attracted to the surface and deposited in a collection area underneath the drum. Non-magnetics flow in a normal trajectory and are recovered separately.

The second step focused on separating small pearls of aluminium from the dross. An eccentric Eddy Current Separator recovered 14% aluminium from the dross.

The eccentric Eddy Current Separator has a high-strength magnetic rotor mounted in the top corner of a non-metallic shell. The rotor, with a series of alternating magnetic poles, spins at high speeds. When aluminium enters the changing magnetic field, a current is induced into the particle. This creates a magnetic field, which is in opposition to the rotating magnetic field, forcing the particle to repel and enable separation from unaffected non-metallic material.

For the finer sized fractions, the remaining material was passed through an ElectroStatic Separator. Separation occurs by induced an electrostatic charge into a conductive dry-liberated particle such as aluminium. The ElectroStatic



Bunting's ElectroStatic Separator

Separator recovered a further 6% of aluminium.

The tests concluded that approximately 15% of aluminum could be recovered from the dross using a combination of the three separators.

Production-Scale Separation Equipment

The production-scale equipment was sized to

handle approximately 3 tonnes per hour of 1.5-20mm aluminium dross. The particle-size range of the feed would be controlled to maximise separation performance.

In operation, the aluminium dross would feed onto a Vibratory Feeder, which would deliver a controlled flow of material onto a 1250mm wide 350mm diameter Rare Earth Drum Magnet. After extraction of the magnetics, the material passes onto a 1250mm wide Eddy Current Separator with adjustable splitter. The Vibratory Feeder, Drum Magnet and Eddy Current Separator are all mounted on one frame and operated through a single, separately located control cabinet.

The remaining material is fed, in designated finer particle size range fractions, through an ElectroStatic Separator. The 1000mm wide ElectroStatic Separator recovers fine aluminium unrecoverable on an Eddy Current Separator and features a control and adjustable splitter.

Importance of Separation Technology

"As with many of our projects, we worked closely with the customer to understand and then confirm the separation capabilities of our equipment," explained Adrian Coleman, General Manager of Bunting-Redditch. "The combination of established and new separation technology has maximized the level of aluminum recovery. The drive for most recycling companies is to recover as much clean metal as possible and with new technology, such as our ElectroStatic Separator, we are able to provide a complete separation solution."

Plant upgrade almost doubles capacity for Icelandic concrete producer

CDE solution upgraded as Steypustöðin – Námur experiences growing demand...

Reykjavík-headquartered concrete producer Steypustöðin - Námur has announced a significant new investment in an upgrade to its CDE wet processing plant that will see it almost double its sand and aggregate processing capacity in Hólabrú, Hvalfjar arsveit.

An area noted for the quality of its natural materials, excavation has been undertaken at Hólabrú for several decades, supplying high-grade sand and aggregate products to meet the material needs for asphaltting, road construction and civil engineering in the Icelandic capital.

In 2009, it was estimated that up to 1,000,000m³ of material had been excavated and processed by Tak-Malbik and Vélaleiga Halldórs Sigurðssonar to support major public works and infrastructure projects, with up to a further 2,000,000m³ to be processed by the end of this decade.

In 2018, Steypustöðin acquired two businesses, Alexander Ólafsson and Tak-Malbik, and with it, two state-of-the-art CDE wet processing solutions commissioned for the companies in October of that same year.

They were integrated into Steypustöðin's operations, reinforcing the company's material processing capabilities through the acquisition and integration of industry experts, heavy machinery and material processing plants, including Tak-Malbik's 80tph (tonnes per hour) CDE sand and aggregate wash plant.

These resources are supporting the continued development of Steypustöðin's mines – Vatnskarðsnáman and Hólabrúarnáman – which remain vital suppliers of minerals for projects in the capital area, other local municipalities and Vegagerðin, Iceland's road administration.

Due to increasing demand for its product range, Steypustöðin is now investing in an upgrade to its CDE plant that will increase the processing capacity from 80tph to 150tph.

Hörður Pétursson, COO at Steypustöðin – Námur, says despite 18-hour production shifts demand continues to outstrip supply.

"Our site operates from 7am to 11pm six days per week, but in spite of a busy production schedule we're still experiencing demand greater than that which we can supply, impacting our ability to build up reserves. The existing CDE plant coupled with our experience of working with its expert team has underscored much of the success of this site to date. For this reason, we were keen to work with the team again to devise a solution that would help us to increase our production volumes."

Allan Esmann, CDE's business development manager for Denmark, Iceland, and Greenland, says identifying the bottleneck limiting the plant capacity was key.

"When it was first installed, the jet pump was capable of conveying sufficient sand and gravel relative to the demand at the time and it was a solution that satisfied the material needs of both the customer and the market. However, with increasing demand for premium construction materials its limited capacity is impacting Steypustöðin's ability to meet the call of the construction industry or build up its own material reserves."

The original configuration of the plant split 0-8mm materials into two fractions – 0-4mm and 4-8mm – on the bottom deck



of the M2500, a fully integrated modular washing plant that combines feeding, screening, sand washing and stockpiling into one compact and mobile chassis.

The jet pump, utilised for the 4-8mm fraction, was identified as the bottleneck, limiting the feed material throughput, Mr Esmann explains.

"We proposed an upgrade that will see the removal of the jet pump which is to be replaced by a new traditional pump. In addition, the full bottom deck will be utilised for one fraction (0-8mm) which will be pumped to a new, separate dewatering screen.

"Here, the 4-8mm fraction will be dewatered, screened off, and stockpiled via new conveyor system, while the 0-4mm underflow of the screen will be pumped back into the original configuration where it will be dewatered and minus 63-micron material removed through a new, higher capacity cyclone."

When commissioned, the upgrade will almost double sand and gravel production for Steypustöðin, whose product range includes five outputs: +22mm oversize, 8-22mm, 4-8mm, 0-4mm and 0-8mm.

Mr Esmann says the project is a demonstration of CDE's customer for life approach.

"Our durable technologies are backed up by leading aftersales support, delivered by the CDE CustomCare team. We operate a customer for life model that sees us continue to collaborate closely with customers once a plant has been commissioned, ensuring maximum uptime and throughput to meet our performance guarantees. We have developed an excellent working relationship with the team at Steypustöðin and we're pleased our technology continues to support one of the leading producers of concrete in Reykjavík."

Liebherr crawler excavator R 960 SME conquers the world market

- Excavator is now available worldwide
- Leading in Europe since 2012
- R 960 SME is the most powerful 60-tonne excavator

The R 960 SME is more than a 50-tonne powerhouse - it is a true 60-tonne crawler excavator. With its 70 tonne excavator undercarriage, it sets the benchmark in its market segment. The further development of the R 960 SME, which has already been available in Europe since 2012, was recently also launched in Africa, Asia and South America. As of now, the SME crawler excavator is also setting its sights on the Brazilian and Russian markets.

Colmar (France), 16 December 2021 - With its stability and the highest breakout forces on the market, the R 960 SME excels with particularly high productivity compared to its predecessor version. With its large bucket volume of 3.7 m³, it is easily suitable for loading dumper trucks in the 30 to 45 tonne weight range.

This excavator, developed and produced at Liebherr-France SAS in Colmar, France, has been setting the global benchmark in the 60-tonne excavator segment since 2012. The R 960 SME has been in use in quarries and mining operations around the world for almost ten years. The R 960 SME also impresses with its low fuel consumption, which can be accessed online via the fuel calculator.

The SME series: Crawler excavators for demanding applications

Liebherr's SME crawler excavators are designed for quarry applications. Four models ranging from 44 to 102 tonnes have been developed for the world market. These variants are equipped with reinforced undercarriages into which components from the larger models of the standard series have been integrated. On the R 960 SME, these are components of the 70-tonne standard model R 966. The same principle applies for the counterweights.

This allows the use of larger buckets without compromising the stability of the machine. Thanks to its special kinematics of the working equipment and specific cylinders, the machine offers exceptional digging and breakout forces that are unparalleled in this machine category. Overall, all these factors increase the performance and profitability of the machine. As with all Liebherr crawler excavators from 14 to 100 tonnes



The R 960 SME crawler excavator achieves the highest breakout forces on the market.

operating weight, machine operators can choose between four different working modes. The hydraulic and engine power can be adapted to the operating conditions to achieve either maximum performance and productivity during difficult applications or a highly economical mode of operation.

Working environment based on the latest standards

The R 960 SME has a spacious driver's cab equipped with a host of features to guarantee operator comfort and safety. These include continuous automatic air conditioning and heating and a large 9" display as standard. The machine is available with bullet-proof windscreen and roof window.



The R 960 SME crawler excavator has proven itself in quarries and mining operations around the world since 2012.

Doosan chosen again after 18,000 hours of untroubled service

The Wroński Group, a family company based in northern Poland, has purchased the latest generation Doosan DL420-7 wheel loader. This purchase decision was strongly influenced by the performance of their existing Doosan DL420-5 wheel loader which has completed over 18,000 hours of trouble-free service and is still going strong.

The new DL420-7 is working in the Węsiory quarry, one of several businesses run by the Wroński Group connected with the construction industry. Founded in 1992, the company's operations cover all of the territory of Pomeranian Voivodeship in Poland. The Wroński Group currently carries out general construction works and runs three building materials warehouses and a prefabricated products plant as well as the quarry, from which it obtains raw materials.

Proven Reliability

"We know the Doosan brand very well. The first machines in our fleet were two DL400s, which to this day are still used for smaller jobs," recalls managing director, Mateusz Wroński.

The company has always been focused on developing the business with regular investments in new equipment and in 2015, the Wroński Group management began discussions with Gausch and Gausch Maszyny Budowlane, the Authorised Doosan dealer for Poland.

"At that time, they offered us a new generation machine to test out, specifically the DL420-5 model. We were amazed by the speed and efficiency when working with the machine. The reduction in fuel consumption was so big compared to our old machine, that the money we saved allowed us to pay the leasing instalment," Mateusz Wroński explains.

After the successful test, the machine never left the quarry in Węsiory, where it continues to work without any problems to this day, and has achieved an amazing 18,000 hours of problem-free work. "So in 2020, when we wanted to buy a new wheel loader, we immediately knew it would be a Doosan," adds Mateusz Wroński.

The new generation of DL-7 loaders

The need to purchase a new machine coincided with the introduction of the new generation of Doosan DL-7 wheel loaders. The existing products have been completely redesigned, and the number of standard functions on the machines again exceeds those on competing models. The company chose a new DL420-7 loader, which with an operating weight of 23.4 tonne, is one of the larger models in the new Doosan DL-7 range.

The DL420-7 is powered by a Scania DC13 6-cylinder engine producing 257 kW of engine output at 1800 RPM. The new engine meets Stage V emission regulations without the need for exhaust gas recirculation (EGR), through the use of selective catalyst reduction, diesel oxidation catalyst and diesel particulate filter (DPF) after-treatment technologies. The soot cleaning cycle on the DPF has been improved to over 6000 h and the operator is fully informed about the status of the DPF via a soot level indicator on the new touchscreen display in the cab.



With no EGR valve and a choice of three power modes (SAT2, Standard or Power), fuel consumption is reduced by 5%. The machine performs very well in difficult terrain, thanks to another standard feature, the hydraulic differential lock (HDL), which is activated automatically at full torque without any additional action from the operator.

The five-speed PowerShift transmission gives the driver the option of three modes: manual, automatic or semi-automatic. A torque converter lock is also standard equipment, which significantly reduces fuel consumption during passes. The lift arm with Z-kinematics provides impressive breakout power and lifting capacity, while the large drop angle allows for efficient unloading.

The LIS (Load Isolation System) provides a smoother ride and higher comfort for the operator, as well as higher productivity due to improved stability when the wheel loader is moving. Following the supplier's recommendation, the bucket capacity has been increased from 4.3 to 4.5 m³ and the



blade has been fitted with rounded edges and a higher spill guard. This makes loading even more efficient and has a direct impact on reducing cycle times and increasing productivity.

From the operator's point of view

"Our wheel loaders are mainly used to pick up material from the quarry face and to load trucks. I can safely say that with the DL420-7 the work has become much faster and the machine never lacks power. The loader is very stable, the hydraulics are smooth, which provides dynamic movements. The ability to control the direction of travel with the joystick is especially praiseworthy, especially when the work requires repetition of the same manoeuvres, for me this hits the bull's eye for loader operation. The operator comfort has certainly increased, the protection against shocks is clearly noticeable, especially when you are working a 10-hour day.



Another important improvement for me is the easy access to filters and components, which means that daily maintenance requires a minimum of effort," mentions operator, Rafał Pawłowski.

The operator's cab is spacious and the steering is electrically controlled. All settings and information can be accessed via an intuitive 8 inch touchscreen, which is easy to read in all conditions. Safety was one of the most important aspects when designing the

DL-7 loaders. The operator's field of vision is increased by enlarged windows, and LED work lights in a 4 front, 4 rear configuration provide excellent illumination, especially in the winter months.

From the owner's perspective

"We work with relatively light material, such as sand, gravel and stone, but the quarry is quite steep and the terrain is bumpy, which means the machine is heavily laden during loading. With this workload, the average fuel consumption of 13 l/h is a very good result. Since the delivery of the machine, we have used it for more than 2500 hours without a hitch, so I consider this to be an extremely successful investment. I am glad that I was the first in Poland to have the opportunity to test the capabilities of this excellent machine. When I choose Doosan, I get quality at a reasonable price. Without compromises," sums up Mateusz Wroński.

Like all Doosan DL-7 wheel loaders, another advantage offered by the DL420-7 is the factory-installed wireless fleet management system, DoosanCONNECT TMS 2.0, which provides extensive information about operating parameters, including work efficiency, via satellite and mobile networks. The standard warranty on all Doosan DL-7 loaders is 36 months/5000 hours, whichever comes first.



Springfield Farm sees big benefits with McLanahan EcoCYCLE and Centrifuge

Springfield Farm Ltd is a family-owned sand and gravel quarrying operation located in Beaconsfield, United Kingdom, since 1984. They produce a range of graded sand and ballast. They dig the gravel in its raw state, wash and separate it, then sell it as one of four core products: 20 mm gravel, 10 mm gravel, sharp sand, and soft sand. The materials are used locally within the construction industry and distributed to builders' merchants and concrete plants.

Challenge

Springfield Farm is a dry site, so they do not have an abundance of water. Over the years, their silt lagoons had reached the end of their lives and were becoming expensive to maintain.

"We were spending more and more time digging them out, handling loose silt, causing immense costs and wear and tear on equipment and just the general drain on resources," explained Quarry Manager Martin Phillips. "This slowed down production immensely because we were pulling machinery off production to just deal with our waste product. It was becoming very time consuming and very expensive."

Not only were the silt ponds a major economic expense, but they also posed health and safety concerns as well. Because of all this, Springfield Farm began to look for an alternative way of processing their silt.

Solution

Springfield Farm started researching solutions online and were met with many options for processing their silt.

"McLanahan were the first people to respond to us," Phillips said. "They were very quick to react, came out to us. We discussed the problem, and they went away and looked for us."

McLanahan supplied Springfield with its EcoCYCLE Modular Thickener for separating the solids from the liquid in the waste stream to reduce the amount of solids reporting to the silt ponds. The Thickener also recovers clear process water for reuse in the wash plant.

To further process the thickened silt from the EcoCYCLE, McLanahan provided a Centrifuge to provide additional liquid-solid separation. The Centrifuge removes water that can be reused in the wash plant and discharges the waste silt as a stackable solid.

"Being a small, family-run site, we're always looking at ways to innovate and improve our working methods," explained Dan Richmond-Watson, the Managing Director of Springfield Farm. "We are incredibly proud to be one of the first in the U.K. to use this sort of technology."

"We like to think of ourselves as an innovative company, and the new EcoCYCLE is a reflection of that," Phillips added. "The quality of the product is what stood out against everyone else. It's well made. It is going to last."

"We liked the product. We liked the company with which we were dealing. They were very quick to sort it out and come up with some good solutions. The whole package was good."





Results

With the McLanahan EcoCYCLE Modular Thickener and Centrifuge, Springfield Farm has been able to process the silt into a material that can be easily handled and transferred to its final destination.

"The McLanahan equipment is ideal because it produces what I would term a finished product that we don't need to handle twice, and we can satisfactorily take that out into its final resting place in the quarry as part of the restoration process," said Richmond-Watson.

"The EcoCYCLE is superior to the old process because we handle the material once, it's dealt with," Phillips said. "As we produce it, it's taken away. We don't have to handle anything again."

Phillips said the McLanahan plant has allowed Springfield Farm to eliminate the troublesome silt ponds from their site.

"We are removing our silt ponds. Ultimately, they will be dug out in the next year or two when they have dried solidly. We've shut down our silt pond," Phillips shared.

Eliminating the ponds from the site also eliminates the risks associated with those ponds.

"Being a waste product over being a semi-liquid means we take a full load down to the site," Phillips explained. "It's easier to handle at the other end. It is not creating a lagoon; it is creating a stockpile. Nobody is going to fall in and drown in it; you might get muddy boots. Again, we've reduced a risk."

Because the McLanahan EcoCYCLE and Centrifuge are creating a drier, easier-to-manage product, Springfield Farm has reduced their silt handling costs.

"It's cutting our operating costs dramatically," Phillips said.

Richmond-Watson added: "The system that McLanahan have produced will start paying for itself immediately."

Managing Mobile Plant Operations



Working with or around mobile plant equipment is a high-risk activity that poses a number of threats if incorrect or unsafe use is exercised; there is a need for effective management to ensure safety standards are set and maintained.

As the number of serious injuries reported to the HSE involving mobile plant equipment continues to increase, we must question whether it boils down to incorrect use, poor training, operator complacency or inadequate supervision of the operators on site; all of which can be corrected with effective leadership and management onsite.

As a manager on site, it is important to remember that managers and supervisors don't have to be a qualified and regular operator of equipment, but they must be equipped to proactively encourage best practice and recognise where complacency may have started to creep in. **But how can you better prepare yourself to manage mobile plant?**

After liaising with customers predominately in the extractives, building products and waste sectors, Certora Training's technical and operational experts have worked closely with customers who were keen to take their operational training to the next level. The result was to create an interactive and engaging course that can be delivered to managers and supervisors of those busy sites utilizing multiple items of mobile plant equipment.

Through these consultation and trials with customers, Certora believe that upon completion of their course, supervisors and managers will be better prepared to manage mobile equipment, with emphasis on the following key areas: **The law directly associated to the use of mobile plant and workplace**



equipment, knowledge of your role as a manager/supervisor, visibility and movement of equipment onsite, operator best practice and the ability to recognise unsafe operations and understanding suitable and adequate training of operators.

If you would like to understand how Certora's Managing Mobile Plant course could directly benefit your managers and supervisors get in touch on 01246 386900 and speak to the team today.



March/April 2022

Aggregate Washing & Screening

A special focus on... static & mobile washing, hoppers, conveyors, cyclones, pumps, trommels, log washers, filter press, plate press, flocculants, scrubbers, separators, lignite plant, dewaterers, classifiers, belt weighing, contract



Engineering safer conveyors: Art meets science

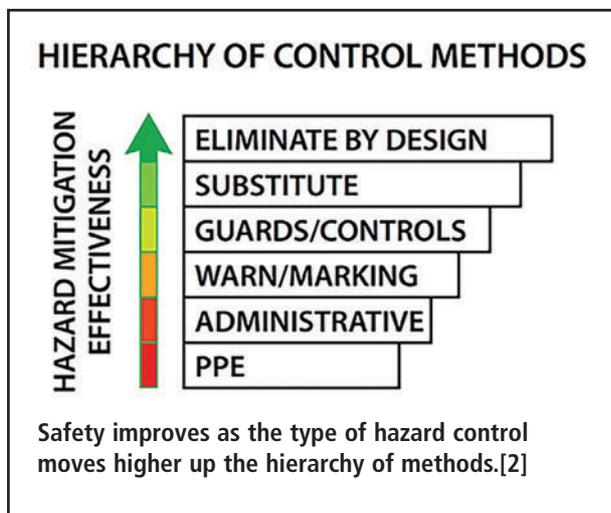
All new conveyor systems will inevitably succumb to the punishing bulk handling environment and begin the slow process of degradation. The system will eventually require more time and labor for maintenance, shorter spans between outages, longer periods of downtime and an ever-increasing cost of operation. This period is also accompanied by an increased chance of injury or fatality as workers are progressively exposed to the equipment to perform cleaning, maintenance and to fabricate short-term fixes to long-term problems. A total system replacement is cost prohibitive, but to remain compliant and/or meet ever-increasing production demands, upgrades and repairs are unavoidable.

When examining the safety of a system, improving efficiency, and reducing risk can be achieved by utilizing a hierarchy of control methods for alleviating hazards. The consensus among safety professionals is that the most effective way to mitigate risks is to design the hazard out of the component or system. This usually requires a greater initial capital investment than short-term fixes but yields more cost-effective and durable results.

The Science: Hierarchy of control methods

Examining the US Occupational Safety and Health Administration (OSHA) accident database reveals the dangers of working around conveyors.[1] Studies have revealed that the highest prevalence of accidents are near locations where cleaning and maintenance activities most frequently take place: take-up pulley, tail pulley and head pulley.

Designs should be forward-thinking, exceeding compliance standards and enhancing operators' ability to incorporate future upgrades cost-effectively and easily by taking a modular approach. Designing hazards out of the system means alleviating causes with the intent to bolster safety on a conveyor system, but the methods of protecting workers can vary greatly. In many cases, it will be necessary to use more than one control method, by incorporating lower ranked controls. However, these lower-ranking approaches are best considered as support measures, rather than solutions in and of themselves.



PPE includes respirators, safety goggles, blast shields, hard hats, hearing protectors, gloves, face shields and footwear, providing a barrier between the wearer and the hazard. Downsides are that they can be worn improperly, may be uncomfortable to use through an entire shift, can be difficult to monitor and offer a false sense of security. But the bottom line is that they do not address the source of the problem.

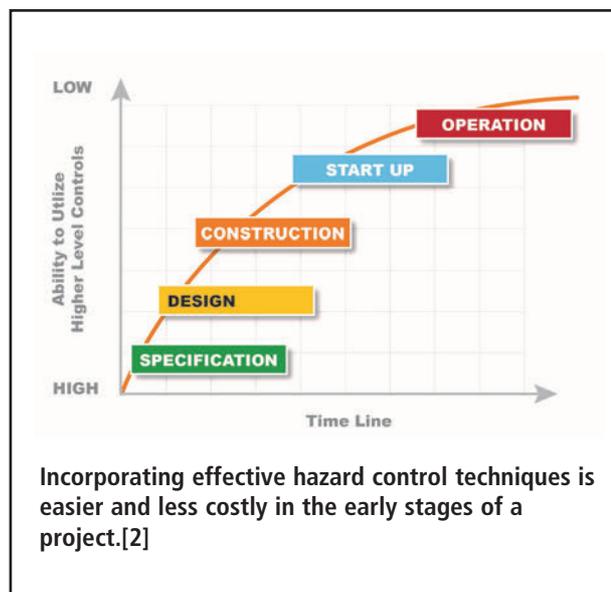
Administrative Controls (changes to the way people work) create policy that articulates a commitment to safety, but written guidelines can be easily shelved and forgotten. These controls can be taken a step further by establishing "active" procedures to minimize the risks. For example, supervisors can schedule shifts that limit exposure and require more training for personnel, but these positive steps still do not remove the exposure and causes of hazards.

Warning Signage is required by law, so this is less of a method than a compliance issue. It should be posted in plain sight, clearly understood, and washed when dirty or replaced when faded. Like lower-tier methods, signs do not remove the hazard and are easily ignored.

Installing systems such as Engineering Controls that allow remote monitoring and control of equipment -- or Guards such as gates and inspection doors that obstruct access -- reduce exposure, but again, do not remove the hazard.

Using the Substitute method replaces something that produces a hazard with a piece of equipment or change in material that eliminates the hazard. For example, manual clearing of a clogged hopper could be replaced by installing remotely triggered air cannons.

Examples of Eliminate by Design are longer, taller, and tightly sealed loading chutes to control dust and spillage or heavy-duty primary and secondary cleaners to minimize carryback. By using hazard identification and risk-assessment methods early in the design process, engineers can create the safest, most efficient system for the space, budget, and application.



Economic analysis of prevention through design (PtD)

Another way of saying "Eliminate by Design" is PtD (Prevention through Design), the term used by The National Institute of Occupational Safety and Health (NIOSH). As a department of the U.S. Centers for Disease Control (CDC), the organization spearheaded the PtD initiative.[3] In its report, the Institute points out that, while the underlying causes vary, studies of workplace accidents implicate "system design" in 37% of job-related fatalities.

Risk Assessment Matrix				
Probability / Severity	Catastrophic (1)	Critical (2)	Marginal (3)	Negligible (4)
Frequent (A)	High	High	Serious	Medium
Probable (B)	High	High	Serious	Medium
Occasional (C)	High	Serious	Medium	Low
Remote (D)	Serious	Medium	Medium	Low
Improbable (E)	Medium	Medium	Medium	Low
Eliminated (F)	Eliminated			

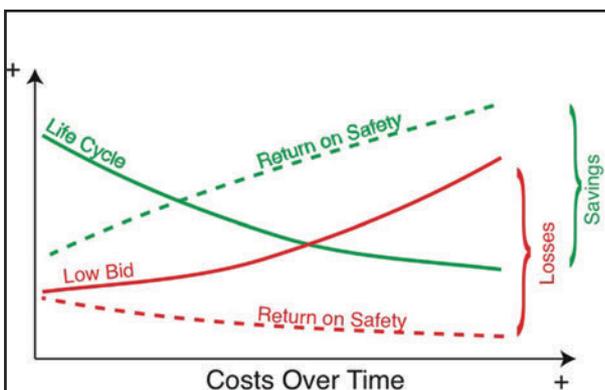
Risk assessment applied to design helps create a safer conveyor system.

Cost is most often the main inhibitor to PtD, which is why it is best to implement safer designs in the planning and initial construction stages, rather than retrofitting the system later. The added engineering cost of PtD is often less than an additional 10% of engineering but has enormous benefits in improved safety and increased productivity.

The cost of PtD initiatives after initial construction can be three to five times as much as when the improvement is incorporated in the design stage. The biggest cause of expensive retroactive improvements is cutting corners initially by seeking lowest-bid contracts.

Low-bid process and life cycle cost

Although the policy is generally not explicitly stated by companies, the Low-Bid Process is usually an implied rule that is baked into a company's culture. It encourages bidders to follow a belt conveyor design methodology that is based on getting the maximum load on the conveyor belt and the minimum compliance with regulations using the lowest price materials, components, and manufacturing processes available.



The return on better design and quality is realized over the extended life and safety of the system.

But when companies buy on price, the benefits are often short-lived, and costs increase over time, eventually resulting in losses. In contrast, when purchases are made based on lowest long-term cost (life-cycle cost), benefits usually continue to accrue and costs are lower, resulting in a net savings over time." [4]

The art: Design hierarchy

Rather than meeting minimum compliance standards, the conveyor system should exceed all code, safety and regulatory requirements using global best practices. By designing the system to minimize risk and the escape and accumulation of fugitive material, the workplace is safer, and the equipment is easier to maintain.

Red, Amber, and Green List for Designing Better Belt Conveyors	
RED LIST	Procedures, techniques, products, and processes to be prohibited in the Specification and Design stages of a conveyor project.
	Prevent loading on the transition of the belt.
	Prevent transition of more than 1/3 trough.
	Prevent loading against the direction of the receiving belt.
	Prevent loading conveyor to 100% of CEMA standard cross section capacity.
	Prevent control and sequencing that allows conveyor(s) to run empty longer than necessary.
	Prevent belt identification stamps in top cover.
	Prevent installing equipment in elevated locations without provision of safe access or tie-offs.
	Prevent Component Selection Based on 'Or Equal' Specifications or 'Price Only' Bidding.
AMBER LIST	Procedures, techniques, products, and processes to be eliminated or reduced as much as reasonably possible. Only allowed with a change in the specification and notice to project owner/manager explaining potential issues and ability to address them in the future.
	Avoid reversing conveyors.
	Avoid multiple load points on a single conveyor.
	Avoid designs created with the intention to increase capacity in the future by increasing conveyor speed; design the system to accommodate future needs
	Avoid combined vehicle and personnel travelways or uncontrolled exits from buildings into traffic patterns.
	Avoid a site layout that does not allow for safe and efficient delivery, storage, lifting of major components such as pulleys, drives, and belting.
GREEN LIST	Procedures, techniques, products, and processes to be encouraged in specification and design stages of a conveyor project.
	Consider ergonomics in the design and access of frequently cleaned or maintained equipment.
	Consider use of pulleys with diameters larger than minimum required for the specified belting.
	Consider access and clearances according to CEMA recommendations.
	Consider the use of design to reduce exposure to hazards.

Rather than meeting minimum compliance standards, conveyor systems should exceed code, safety, and regulatory requirements.

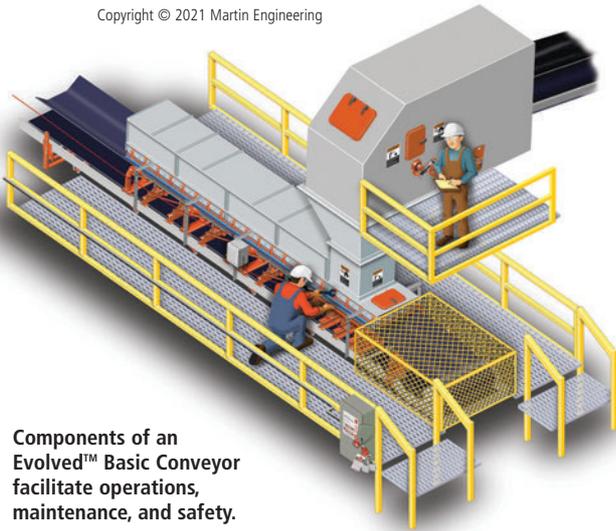
Life cycle costing should play into all component decisions. Buying on Life Cycle Cost and anticipating the future use of problem-solving components in the basic configuration of the conveyor provides improved safety and access, without increasing the structural steel requirements or significantly increasing the overall price. It also raises the possibility for easier system upgrades in the future.

Best practices: The "Evolved™ Basic Conveyor"

Using the Hierarchy of Controls along with the Design Hierarchy, engineers will be able to construct an "Evolved Basic Conveyor" that meets the needs of modern production and safety demands. Built competitively with a few modifications in critical areas, an Evolved Basic Conveyor is a standard bulk material handling conveyor designed to allow easy retrofitting of new components that improve operation and safety, solving or preventing common maintenance problems.

Installing or providing for maintenance-minded solutions in the loading zone can improve safety and reduce man-hours and downtime. These components include slide-in/slide-out idlers, impact cradles and support cradles. On larger conveyors, maintenance aids such as overhead monorails or jib cranes assist in the movement and replacement of

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Components of an Evolved™ Basic Conveyor facilitate operations, maintenance, and safety.

components. Also, designers should ensure adequate access to utilities -- typically electricity and/or compressed air -- to facilitate maintenance and performance. Next-generation conveyor designs may even feature a specially-

engineered idler capped with an independent power generator that uses the conveyor's movement to generate power for a wide array of autonomous equipment.

Dust, spillage, and belt tracking are top concerns for many safety professionals. Field tests have shown that enlarged skirtboards and engineered settling zones promote dust settling and reduce fugitive material. Curved loading and discharge chutes control the cargo transfer for centered placement and reduced turbulence. As the load is centered on the belt, guides ensure even travel through the take up to promote consistent belt tracking.

Any transfer point is prone to buildup and clogging under the right conditions, be it ambient humidity, material wetness, volume, or surface grade. Flow aids such as vibrators or air cannons on chutes can sustain material movement, improve equipment life, and reduce the safety hazards associated with manually clearing clogs.



A properly configured conveyor minimizes emissions for improved safety and easier maintenance

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Conclusion

Engineering safer conveyors is a long-term strategy. Although design absorbs less than 10 percent of the total budget of a project, additional upfront engineering and applying a life cycle-cost methodology to the selection and purchase of conveyor components proves beneficial.

By encouraging the use of the Hierarchy of Controls at the planning stage, along with the Design Hierarchy at the design stage, the system will meet the demands of modern production and safety regulations, with a longer operational life, fewer stoppages, and a lower cost of operation.



An enlarged settling zone retrofitted onto an existing conveyor enhances transfer point airflow control.

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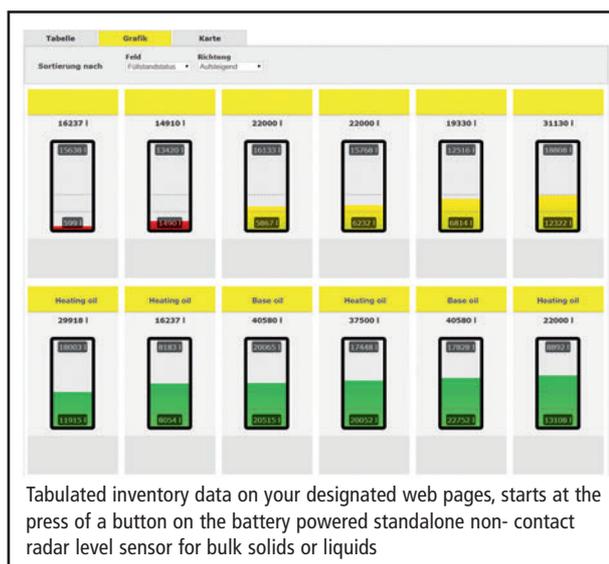
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Bulk solids and liquids remote inventory: IIoT monitoring sensors you can stick with!

It's no secret. The bulk logistics and purchasing sectors are always looking for simple, streamlined ways of remote monitoring of their stocks. Successful implementation of 'remote/vendor inventory management' can deliver myriad direct benefits; perfectly timed logistics, CO2, fuel and time savings, optimised stocks, avoiding returned loads or emergency deliveries, less stress and process shutdowns. There are also strategic gains through streamlined purchasing and ordering, improved supplier-customer partnerships, and retention of supply contracts.



No cables, wires or boxes, capable of battery power for 10 years, level sensors for remote inventory, waste or environmental monitoring



Fast payback

The applications for bulk solids and liquids are many: Sites populated with fixed silos and tanks, mobile tanks and IBC's, on road or rail transport, waste-collection containers, silos at temporary or semi-permanent sites. All offer different challenges; site access, product compatibility, container and infrastructure tracking. While many are based on just in time supply and delivery, others are operating removal and disposal services. Because of the size and weight, speciality and often 'dedicated' nature of bulk shipping, an effective stock management overview has the capability for fast payback.

One single device, simpler to implement

Up until now, the implementation of remote monitoring has involved complex internal and external engineering, multiple cross-department planning, programming, external cabinets, power supplies, cabling and sensor installation, followed by often complex commissioning and integration into software systems. This is a new technology emerging from the field of process and control, and it offers a greatly simplified solution in a single, battery powered wireless sensor.

Get it right first time

VEGAPULS Air is the first IIoT level sensor range of its kind, designed and manufactured for all types of vessels storing or transporting bulk solids and liquids; from waste water to chemicals, fine powders to plastic pellets, animal feeds to aggregates. It has wireless communication, stand-alone

battery power for up to 10 years, vessel measurement ranges up to 30m, ready to locate via GPS, communicate and provide your data - in one compact sensing device. Simple to install, easy to set up and quick to deliver stock management information in the format you need. VEGA are the world leaders in non-contact radar level-sensing technology, with 30 years' experience. Easy, reliable and cost effective, it means you can be confident in the accuracy of your inventory, waste collection, or environmental monitoring data, that you base logistics decisions on.

Stick with it

Combined with VEGA 'SaaS' (Software as a Service) VEGA Inventory System (VIS), to install at your monitoring point it can be as simple as stick it to an IBC, or install it onto a silo or tank, and activate at the press of a button – then all you need is a login to see your data and begin managing your logistics/ supply-chains effectively, whether on the desktop or mobile App, using tables, maps and predicted usage.

VEGA offer truly visible, global inventory management, connecting you to the finished product tank outside your door, waste collection depot in your city, national plastic powder supplies, or an animal feed silo on the other side of the world. From Sensor to Server, and to your Screen, VEGA take care, service and responsibility, for it all. To discuss your requirements, ideas and explore solutions, or make a test to see its capabilities, please contact VEGA Controls Ltd.



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