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Issue 17

Global News and Information on the Bulk Materials Handling, Recycling and Quarrying Industries

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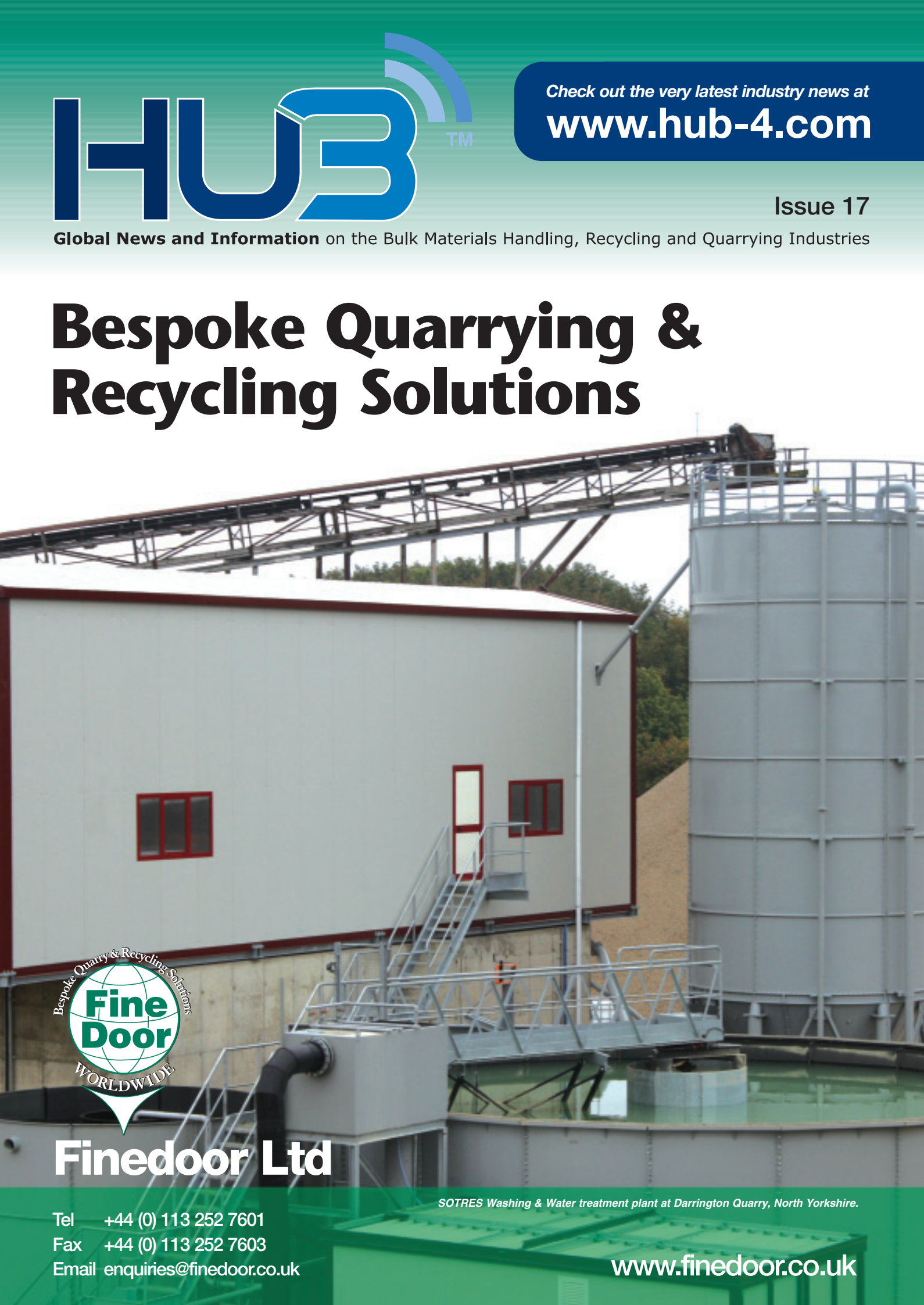

SOTRES Washing & Water treatment plant at Darrington Quarry, North Yorkshire.

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Asphalt Recycling

Inevitably asphalt road surfaces require replacement or patching periodically due to damage from traffic loads, harsh weather conditions and general aging and damage. When the old used asphalt is extracted during the repairs it can be either, recycled, reused or disposed of in landfill.

The advantages of reprocessing reclaimed asphalt are not just economic in an increasingly price sensitive market, the process also helps to preserve a valuable natural resource, and reduce the transportation costs and effects.

This process of recycling asphalt has been around since 1915 in some form. The damaged asphalt is taken from the road/pavement and reused in the reconstruction of new surfaces, by using the correct technology and plant, of which many varieties are available depending on the application of the end product.

Over the last 70 years asphalt recycling has developed into its present form with European countries such as the Netherlands managing to produce 50% recycled asphalt from their used asphalt available, whilst countries such as Germany, Italy and Switzerland managed to produce around 25-40%. The UK has produced a smaller amount compared with these countries in past years, yet it is estimated that production is increasing and over the coming years will continue to grow, due to the ever increasing oil prices, which is the main ingredient in asphalt, and environmental issues surrounding the topic of promoting the effective and sustainable use of asphalt.

Looking from the other angle of product performance the biggest concern about recycled asphalt is whether or not it is as durable as new asphalt. Most experts and engineers are convinced that it can last as long as a decade or longer, proving that the use of second hand materials does not make the product inferior and can be equal to a product produced with all new materials.

In conclusion it is obvious that the choice to increase the use of recycled asphalt is of no detriment to the end-user or manufacturer, whilst only having positive effects on the environment. This considered it is now necessary for the government, asphalt production companies and relevant organizations to promote the use and production of this product through education, development of asphalt recycling equipment and incentive programs.

Ammann Equipment Ltd

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CONTENTS

HUB DIGITAL MEDIA LIMITED
27 OLD GLOUCESTER STREET, LONDON WC1N 3AX

Spring 2011

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Finedoor install SOTRES Washing and Water Treatment Plant for Darrington Quarries.

Darrington Quarries Ltd is part of the international infrastructure, environmental services and energy group, FCC and is a long established quarrying company operating in Yorkshire with six limestone quarries situated close to the A1, from Doncaster in the south to Tadcaster in the north. With an additional sand quarry at Hensall the company offer a full range of limestone aggregates for road construction, house building, concrete production and civil engineering. Additionally, Darrington Quarries also offer recycled aggregates and certificated green tree topsoil, with inert materials being accepted at their Barnsdale Bar Quarry for recycling and restoration applications.

Last year the company instigated a procurement process for a water and mud treatment plant facility to be built at their Darrington Quarry site. After very competitive bidding Finedoor Ltd were accepted as the most comprehensive and competitively priced tender to supply a SOTRES Washing and Water Treatment Plant.

Awarded the turnkey project Finedoor were then tasked to supply a plant within 6 months which would process a maximum of 450 m^3/h (99,000 gallons/h - 1650 gallons/min) rate of waste water from the washing plant, treated with dry solids concentration in a sample taken at 72 gr/liter. With a designated working week of an 8 hour day, 5 day week and 200 days/pa; the production facility is required to produce dry mud (easy to load), and clarified water to re-use on the washing plant.

Designed for low maintenance and running costs Finedoor were responsible for the construction of the plant, including all steel erection, installation of machinery, electrical works and commissioning. The electrical works being sub contracted out to Specialist Electrical Systems Ltd. Additionally, as the plant was constructed to current CDM regulations, Finedoor took the role of CDM co-ordinator for the design and construction of the plant and the civil works.

Plant Flow:

Waste water is supplied into a feed box which links the washing plant and the 13 metre diameter thickener. The waste water is charged with suspended matter (of a particle size less than 80 microns) and is introduced into the feed mixing box which is subjected to high agitation with the flocculent injected at the same time. This very efficient mixing of the waste water with a highly diluted flocculent solution provides a significant reduction in flocculent usage. The flocculated waste water is then poured into the centre of the thickener via a tripod pipe. The flocculants formed settling to the bottom of the tank forming a sludge bed.

This sludge is then brought into the concentration cone by the peripheral scraper arm and blades. A central scraper concentrates the sludge into the cone, maintaining movement, thus eliminating any water suction by the pump. When the sludge achieves the right concentration the pump automatically commences extraction. The overflowing clarified water is then collected into the peripheral trough and stored in a buffer clarified water tank and subsequently pumped back to the washing plant for reuse. A tunnel below the thickener allows the sludge pump to be situated directly underneath the central cone allowing a greater extraction of extracted sludge. This pump maintains a homogeneous mixing of the slurry and avoids any blocking concentration in the cone. At the end of the production day the silo can be fully emptied.

A fresh water tank which is fed from an outside source for the requisite top-up (50m^3/h), feeds the flocculent apparatus. The subsequent overflowing is then compensated by the fresh water injection consequently replacing the loss of water in the sludge and the aggregates.

The sludge extracted from the thickener then feeds the 200m^3 buffer silo which in turn allows the storage of sludge due to variation in the quantity, or characteristic of the material. A pump installed at the bottom of the silo cone keeps the sludge mixed, avoiding excessive concentration in the cone. An ultrasonic probe then indicates the quantity of sludge in the silo and will only allow the commencement of the pressing cycle if there is sufficient sludge to feed the press.

The Filmac filter press is a 1500 mm square plates machine with a cloth washing system; complete with plate shifting facility (shaking system) the plates are pulled on four points, two high and two low allowing the adjustable system to be efficiently shaken.

The water treatment plant is driven from a dedicated control room with a finger touch PLC. Situated alongside is the Controlfloc Flocculent Dosing Apparatus. Equipped with two tanks this enables an alternated flocculent preparation with a

low concentration and ideal maturation. This apparatus allows the waste water sampling in supply phase already mixed with the flocculent and measures the sedimentation time. This enables the adjustment of the flocculent dosing following the product variation to treat. An inverter allows the PLC to make this automatically varying the flocculent pump velocity with the PLC.

The installation has been very successful and following one of the worst winters in the UK in living memory is now in full production. John Dickinson - (Engineering Manager), commented, *"Initial fire up was good just about every section of the plant worked first time. This last winter highlighted some problems with frost protection, but Finedoor worked to repair the damage as quick as the parts could arrive. Frost protection has been extended and since this was completed the plant as performed as expected."*

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CDE Global announced as a Best Managed Company by Deloitte

CDE Global has requalified as one of Ireland's 'Best Managed' companies in the Deloitte Best Managed Companies Awards Programme. The company was first recognised as a Best Managed Company in 2009. The company, which demonstrated superior business performance for a third year running, was recognised at a gala awards dinner in the Burlington Hotel in Dublin on 4th March 2011.

The Deloitte Best Managed Companies Awards Programme, in association with Irish Life Corporate Business, recognises indigenous Irish companies across the island of Ireland which are operating at the highest levels of business performance.

Winners of the awards can apply to requalify as a Deloitte Best Managed Company for two consecutive years, following receipt of the award. Companies applying for requalification must satisfy the programme eligibility criteria and go through a requalification review process in order to ensure that they continue to uphold the standard of a Deloitte Best Managed Company.

Commenting on the award, Brendan McGurgan, Managing Director of CDE Global said: *"We are delighted to have been recognised by Deloitte as one of the Best Managed companies in Ireland for the third consecutive year. This award is recognition of our success in further expanding the global reach of our products and bringing new products to the global mineral processing market."*

Commenting on the winners of the Deloitte Best Managed Companies Awards Programme, Pat Cullen, Managing Partner, Deloitte and judging panel member said: *"Despite the negative sentiment that currently prevails, the Best Managed Companies Awards Programme shows that Irish indigenous companies are a cornerstone of growth in the Irish economy and can and will play an important role in Ireland's overall recovery. For proof of this, you need look no further than this year's winners."*

Damian Fadden, Director, Irish Life Corporate Business, and fellow judging panel member said: *"Irish Life Corporate Business is delighted to support the Deloitte Best Managed Companies initiative. Ireland's economic recovery can benefit hugely from the contribution made by its indigenous business sector, and this initiative helps companies in that sector to showcase their success and to benefit from expert mentoring to help them move to the next level. Our staff have met many of the participating companies and have been very impressed with their innovation and determination - on behalf of Irish Life Corporate Business I would like to wish all the companies every success in 2011 and beyond."*

The Deloitte Best Managed Companies Awards Programme is open to companies from all 32 counties on the island of Ireland. It is the only awards programme that considers a business' performance from every perspective. Details of entry for the 2012 Awards will be issued in the coming weeks on www.deloittebestmanaged.ie.

The 'Best Managed' designation is an important marketing tool for the winning companies - but, perhaps most importantly, the awards provide a reason to celebrate the efforts of the entire company.

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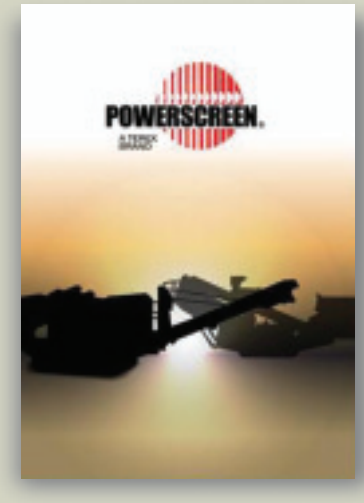

Powerscreen, one of the world's leading providers of mobile crushing, screening and washing equipment, has brought customers a new way to access its equipment through the launch of its new Powerscreen App for the iPad® and iPhone®, with a Blackberry® and Android® version planned for later this year.

"Today people expect instant access to information and this innovative development from Powerscreen will help our customers get the information they need," said Patrick Brian, Global Sales and Marketing Director. *"On the official application for Powerscreen customers can view equipment information and specifications, locate the nearest dealer or simply browse photo and video galleries, no matter if you are in a quarry or sitting in an office."*

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Representatives of Master Magnets Ltd with Alexandra Turchyn

Master Magnets "Highly Commended" For Midlands Business Award.

If ever there were a way to celebrate over 30 years of successful trading, then it is with a regional award that recognises your business for its overseas exporting achievements and that is just what has happened to Master Magnets Ltd after they were named a finalist in the Midlands Business Awards for the "Exporter of the Year" category.

The Redditch-based business, which was founded in October 1978, recently went up against four other businesses in the hope of being named the Midland's greatest exporter of goods. The company's core business is the design and manufacture of Industrial Magnetic Separation and Metal Detection Equipment, which they sell to over 21 countries around the globe.

With 17,000 square feet of factory space and 30 tonnes of overhead craneage capacity, Master Magnets is able to produce much larger and heavier equipment than many of its competitors and the strategic acquisitions of Integrated Recycling Systems and Metal Detection Ltd have also helped to significantly increase the company's target markets.

Exports accounted for 55% of the firm's turnover last year and with agents in 17 countries including the USA, Germany, India and Italy, it is something that is high on the company's list of priorities. Master Magnets owes much of its overseas success to its fantastic global representation and also to the company website, which was visited by over 30,000 different people last year, from over 150 different countries.

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Weighing technology whitepaper from Avery Weigh-Tronix

Avery Weigh-Tronix has produced a white paper exploring weighing technology. It focuses on the development of the weigh-bar, which it claims is up to ten times more reliable than loadcells.

First developed in the 1960s, the weighbar is an all-electronic strain gauge weight sensor designed to measure the applied load accurately without the lproblems associated with other technology. It produces reliable and repeatable readings, while its weatherproof and shockproof design allows it to withstand environmental challenges.

The white paper explains the technology behind the weighbar and how it overcomes issues such as end loading, side loading and torsion. It also outlines some more recent advances in the technology.

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Mentor reach new heights with PASMA training

Alongside their already comprehensive portfolio of accredited courses, Mentor Training are now pleased to be able to offer PASMA training for the use of mobile access towers, both at their approved training centre and on customer sites.

The standard one day course, which can accommodate up to twelve delegates, covers tower assembly, stability, repositioning, inspection, dismantling, care and maintenance and tower safety, including regulations and standards such as Work at Height 2005. According to these regulations, mobile access and scaffolding towers should only be used under the supervision of competent persons. Competent persons are those who are trained in fall protection, hazards and their reporting, maintenance and inspection, and safe and emergency procedures of work. These are all covered on the PASMA course.

PASMA is the most extensively recognised form of mobile access tower training in the UK, and only accredit courses by authorised training members such as Mentor. The companies authorised by PASMA are subject to thorough assessments and audits to ensure compliance with the standards. On successful completion of the course, all delegates receive a certificate and photo card to demonstrate their compliance with PASMA standards.

The best way to ensure your operators are safe and in accordance with the Work at Height regulations is to provide them with the correct training. For further information on PASMA courses and to see how Mentor can meet all your training needs call 01246 555222.

www.hub-4.com/directory/6755

Volvo CE becomes the first supplier in the U.K. to be accredited for skills training

Volvo Construction Equipment Division, Volvo Group UK Ltd has been awarded full accreditation as a skills training provider by The National Skills Academy for its Paver Applications training course.

As part of a European initiative by Volvo Construction Equipment to launch a Road Institute training programme focussing on providing contractors and industry bodies with quality training for their paving personnel, the Volvo dealership in the UK has gone one step further and achieved accreditation with The National Skills Academy for Materials, Production and Supply.

The training courses have been designed to improve the knowledge and understanding of paving techniques by means of theory classroom based theory and practical, hands on experience operating Volvo road equipment. The two and a half day course takes place at Volvo's purpose built customer support centre at Immingham and can be tailored to suit individual contractors' needs and directed to all levels of existing knowledge from novices to experienced road crews, management and technical personnel.

Since its inception here in the U.K., Volvo CE has held six such courses since the start of the year with extremely positive feedback coming from both course students and the companies sponsoring them - such as Lafarge, Eurovia and Balfour Beatty to name a few.

Graham Crawshaw, from the MPQC (Mineral Products Qualification Council) and training auditor for Proskills is delighted how the structure of Volvo's training package has taken shape. *"I'm very happy with the course structure, the balance of the theory and practical elements of the course and the way the information is being given,"* he said. *"There is a good deal of information and knowledge that needs to be imparted to ensure everything is covered and in particular, all aspects relating to safety and Volvo's instructors are doing this very well."*

Presenting Volvo Construction Equipment with its accreditation award at Immingham on the sixteenth March 2011, Proskills Network Development Manager Richard Bloxam said; *"Accreditation marks out those training providers that offer specialist and high quality training to our sector. Volvo Construction Equipment Division is now one of thirty training organisations that has achieved our high standard and the first industry supplier to achieve accreditation which demonstrates that Volvo CE is leading the way."*

Training courses are held based on demand with delegates charged a modest fee for the course and certificate registration. For more information on forthcoming courses contact either Jill Groom on 01223 2519252 or Michael Lloyd on 07900 678492.

Volvo Construction Equipment Division markets wheeled loaders, articulated haulers, hydraulic excavators, graders, Volvo utility equipment and Volvo road equipment products in the U.K. There are eight strategically placed customer support centres and a network of compact equipment dealers to ensure high quality customer support is maintained throughout the country.

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Hydrex invests £2m in Bell loaders for Görrel

Görrel, one of the UK's largest self-drive plant rental firms, is taking delivery of 12 wheeled loaders from Bell Equipment following a £2m investment from Görrel's parent company Hydrex.

The deal is a significant step for Bell in terms of gaining full industry recognition for its loaders, which were introduced to the UK only two years ago.

The investment by Hydrex also represents a positive commitment by the company to provide its customers with the very best operational solutions available.

Görrel has traditionally built its sizeable 180-strong wheeled loader fleet around Volvos. This move marks the firm's first venture into the Bell product.

Mike Haskell, general manager of Görrel, said the Bell machines had been *"impressive"* during a demonstration last year at a wood recycling plant in Manchester, which prompted the deal.

"The extremely dusty environment was intentionally chosen to really put the Bell machines through their paces.

"Other loaders operating on that particular site have experienced severe overheating problems due to the airborne debris clogging up the system, leading to a lot of downtime for cleaning and maintenance".

"The Bell L1706E loader that was trialled performed impressively and was still spotlessly clean after the end of the demo."

Bell's seven-strong wheeled loader range, manufactured by John Deere, comes with the highest standard specification in the industry. Although the machines boast a number of special features, it is the unique QuadCool cooling system, with wide-core radiators, that truly sets Bell apart from the rest, particularly in a dusty waste and recycling environment.

The 12 Bell loaders purchased by Hydrex cover much of the range, from the smaller utility machines to the larger production models. They include two L1204Es, three 1506Es, two L1706Es (one with high-lift arms), three L1806Es (one with high-lift arms) and two L2106Es.

All of the loaders are fitted with a hydraulic quick-hitch to enable the speedy change of buckets from inside the cab, as well as third-line hydraulics and multi-lever controls.

Carl Woollaston, sales support manager for Bell Equipment, said: *"We're confident at Bell that the specification of our loaders, particularly with the QuadCool system, means we can challenge the very best in the industry. But it always takes time for a new product to gain the confidence of the market".*

"The fact that a company the size and stature of Görrel has effectively endorsed our product so highly means an enormous amount to Bell. It's a fantastic step forward, and one that we hope we can build on."

While Bell has a strong reputation for after-sales service, Görrel's own team of skilled engineers will carry out all scheduled and unscheduled maintenance of the Bell loaders for its customers.

Bell is nevertheless providing Görrel staff with the same training courses that it gives its own sales staff and field service engineers to boost product familiarity and allow user feedback.

Hydrex chief executive officer Carl D'Ammassa said: *"Hydrex has enjoyed a very good relationship with Bell for a number of years in terms of their dump trucks".*

"The loaders though are relatively new in the UK, so this investment for Görrel was not a decision that was taken lightly, particularly as Görrel is operating in such a competitive market".

"But from the evidence we've seen, the Bell wheeled loaders can easily hold their own, and in some areas outperform rival products. Bell remains a great company to do business with, always exceeding expectations when it comes to after-sales support."

D'Ammassa added: *"Hydrex is fully committed to making the very best possible solutions available to our customers. This is especially important in terms of machine reliability and fuel economy in the current economic climate."*

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Dig A Crusher Helps WSR Skip the Waste Stream

Widnes Skip and Reclaim may have rebranded itself as WSR Recycling, but the company has retained its loyalty to the Dig A Crusher brand with the purchase of some new equipment including the first Max X Tract density separator to be sold in the UK.

Widnes Skip and Reclaim has gone through a lot of changes over the years, before being rebranded as WSR Recycling in 2009. A third-generation family business that started out in 1930 in agriculture and transport has grown into a major player in recycling in the North West of England.

The 32 staff, plus 15-20 agency staff are responsible for one of the most thorough recycling operations in the country. The original 0.8 hectare site grew to 1.6 hectares when two adjoining sites were acquired, and the company is looking to purchase two other adjoining sites of 1.8 and 1.7 respectively for the addition of new enclosed sorting bay and picking line. As the site has grown, so have the services on offer. Originally most of the waste was construction and demolition (C&D) material from skips, but that has changed over recent years to become include a greater degree of industrial waste. Today, most of the recycling business is done in plastics and the company is looking to add ballistic and optical sorting devices to aid and speed segregation in this field. The Materials Recycling Facility (MRF) is where material can be sorted into clean materials ready for traditional recycling, wood, hard and soft plastics, metal, paper & card being sorted by trommel and a picking station. WSR also processes more unconventional products such as soil fines and road sweepings, and have areas set aside for soil remediation and green composting. It currently process 15,000 tonnes of green waste on an adjoining 1.6 hectare composting site. ▶

Stubborn Material

Although most of the material coming into the facility can be sorted and recycled, a certain amount of end product has traditionally remained stubbornly awkward to process; the fines from the original picking line being one such product. "*The small items that fall through the 40 mm trommel screens are full of all sorts of contaminants. There is a lot of soil, mixed with glass, paper, soft plastic, stone and wood, often with a high organic content. This was so hard to sort it invariably ended up as landfill,"* Prescott explains. *"However, having been impressed with Dig A Crusher products before, we thought we'd have a look at the company's new Max X Tract density separator."*

To put the machine through its paces, WSR set up a segregation line with a 12 mm screen Doppstadt trommel feeding the Max X Tract. The trommel removed all the fines which were reclaimed for topsoil and subsoil. The remaining material was then fed into the Max X Tract by conveyor which then removes all the paper and plastics from the heavier contaminates.

Seasonal Differences

Managing director Nick Prescott has spearheaded the company's change of direction, and is well aware of the changes still to be made. "The change of name was just the first step. People thought we only dealt with skips and were often amazed at the facilities here; that included local authorities that now view us in a totally different light," Prescott says. *"As a result, we now receive a lot of compactor waste and more general products for recycling. We operate under all conditions and frequently win orders against much larger companies simply because we run in such an efficient manner. We are very adaptable and can change the waste steams and their management very easily. For instance, summer and winter waste products are very different and we have to be able to change processing to suit."*

To provide ever greater processing flexibility, WSR has recently purchased a newly-upgraded Dig A Crusher 1200 excavator-mounted bucket crusher attachment; the fifth such model to join a WSR equipment fleet that also includes a pair of Dig A Crusher 900 models.

"We use the 1200 crusher at the start of a mini picking line," Prescott says. *"A lot of the C&D waste comes mixed with contaminated material that has to be removed if we are to recycle it commercially. Customers are very precise about Type 1 or 6F2 products. The Dig A Crusher 1200 crushes everything down to a 75 mm product. The smaller crushed product enables the magnet on the line to remove the rebar and metal, and the pickers to remove everything else."*

"The arrival of the Max X Tract has turned a single frustrating waste stream into two revenue generating streams. Stone supplements our aggregate products, and the plastic/paper waste is sold as a fuel product," Nick Prescott concludes. *"The Max X Tract has proved its worth already. We have been able to sort and segregate a backlog of waste that was very awkward to deal with. Being able to sort it so efficiently means it can be processed, recycled and more importantly sold, rather than stockpiled and dumped as landfill."*

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The escalating cost of landfill, plus EU requirements for increased levels of recycling mean that recycling plants are coming under ever increasing operational pressures. Significant investments in plant and equipment are an answer to these pressures, at the same time opening up possible new revenue streams as processing of recycling materials becomes more efficient and inclusive. However, the generation of such revenues - and the ability to maximise earning potentials - depends on efficient continual operation of all installed plant and equipment, particularly such close-to-process items as transfer chutes, pneumatic pipework, cyclones, separators, hoppers, screens and crushing plant.

Today all manner of materials must be recycled: including glass, ash, metals, plastics, wood and even stone. However some of these materials are extremely abrasive when transferred; especially so when they are conveyed pneumatically in enclosed pipework systems and at high throughput rates and speeds in order to meet plant recycling targets. If adequate wear protection is not provided, the inevitable result will be high levels of wear that can cause premature failure - holes in pipework systems, chutes, hoppers and the like - and also spillages that can be difficult and costly to clean-up.

For plant operators looking to protect their investments against such occurrences there is a simple solution: wear protection - the process of coating or lining process plant and equipment with ceramics, metallics or polymers to extend its life. The economic argument for wear protection is compelling: the benefits can be appreciated at a glance from the attached graphic prepared by wear protection specialist, Kingfisher Industrial. The graphic compares the ongoing costs associated with equipment and installations that do not benefit from wear protection with the one-off (i.e. purchase) costs of enhanced protection, highlighting the continuous operational gains of the latter investment strategy.

"*It is far more profitable for recycling contractors to employ suitable wear protection on their plants, than having to provide maintenance and repair of equipment at regular intervals, due to problems associated with wear and corrosion,*" said John Connolly MD of Kingfisher. "*Reduced maintenance means reduced*

risk, reduced cost, and more uptime over longer periods - all of which are critically important to improve the efficiencies of companies that frequently operate around the clock."

Kingfisher has calculated that, on average, users of its wear protection systems benefit by a factor of 5 times their initial outlay, with many installations providing wear life of up to 20-years following appropriate wear treatment.

An application at a Scottish recycling facility underlines the benefits. The facility grinds glass bottles and then blows the material pneumatically through pipework and a cyclone into a glass batch furnace. However, this process was being interrupted by the highly abrasive nature of the ground glass, which was causing the pipework to fail 'in weeks'. Kingfisher was called in to provide a solution - in this case its K-Zas ceramic lining material. Since installation there have been no failures in any of the wear protected areas for over 2-years.

A key benefit of wear protection is that it can be employed at any time in the life of a recycling plant. However, if the plant is designed with wear protection from its inception, then overall equipment costs can usually be reduced, because the system chosen to protect the equipment can often remove the requirement to manufacture components using heavier grades of material.

This is possible because high conveying speeds and abrasive materials cause wear of varying intensity at different points in recycling pipework systems. Consequently, protection need only be applied to areas of plant that are most vulnerable to wear, further reducing upfront costs and improving ROI for the system user.

Using a combination of ceramic, metallic and polymer lining systems, Kingfisher has had overwhelming success in protecting equipment and extending the service life of plant that, without intervention, would otherwise have been designated as scrap. In many instances, the benefits of protecting plant are threefold: in addition to protecting against wear, the low friction nature of the lining material reduces energy usage and allows a greater volume of material to be throughput.

A recycling plant that is equipped with a well designed wear protection system also offers a number of incidental cost saving benefits. Because pipework no longer has to be broken down for maintenance at regular intervals, no specialist labour is required, avoiding the safety risks of personnel working at height, performing hot work and

lifting operations. Also avoided are the tasks of organising access platforms and plant hire, with their attendant costs - and risks; and those of devising clean up procedures for any spillages that can occur when process pipework is perforated.

Using Kingfisher's AbrAlarm system the risk of spillages can be reduced to almost zero. Comprising a low voltage electrical indicator that is integrated into the wear lining, the AbrAlarm displays a fault when the lining is worn through. Early warnings of this type are particularly important in critical cases, where pipework/equipment failures could result in the discharge of toxic substances or gases into the atmosphere.

www.hub-4.com/directory/12641

Making sand from glass

The production of sand by means of glass recycling is a developing market in Australia, and Alex Fraser has been supplying asphalt plants for five to six years with product from various crushing methods. After an impressive couple of months using a rented Pilot Crushtec TwisterTrac AC210; the Alex Fraser group purchased one of their own. The company's recycling project manager Brent Alford says that Alex Fraser has invested considerable time and money into the research and development of recycled glass sand as a viable product, and there is still a long road ahead.

"We are in the development stages of releasing a high quality sand replacement product into the Victorian market and the TwisterTrac was an integral part of the crushing, screening and cleaning process that we have put together," Alford explained.

Working in conjunction with other crushing equipment, the TwisterTrac produces two products at the moment, recycled sand of minus 10mm and recycled sand of minus 5mm.

According to Alford, the company is built around recycling and *"at each stage of our company's development, we had to believe in our products and push for their acceptance into the market place".*

The material used for making sand would normally have gone into landfill sites and Alex Fraser's customers are slowly but surely accepting this product as the norm.

"It is now the case that recycled concrete is seen as an equivalent product to the virgin rock product it is competing with. Recycled sand has already met with considerable success as we recently delivered recycled sand to a large pipe line project where our product was compared favourably to the best pipe bedding sand from local sand quarries," he explains.

Alford concluded by outlining the advantages of recycled sand for the Melbourne recycling operation:

- **Transport** - the closest sand deposits are more than 50kms away whereas the glass recycling plants are situated not more than five kilometres away.
- **Landfill** - if we didn't recycle the glass waste into sand it would be buried as landfill which is a bad outcome for the environment.
- **Similarities** - our recycled sand has all the physical characteristics of traditional quarried sand.

Pilot Crushtec export sales manager Paul Chappel explained that Alex Fraser first became interested in acquiring the TwisterTrac after company representatives were shown the mobile vertical shaft impact (VSI) crusher at the Bauma trade fair in 2010.

"At Bauma, we made arrangements that Alex Fraser hire a unit from an Australian dealer for a trial period. This proved successful as Alex Fraser was particularly impressed with the TwisterTrac's ease of use and reliability," Paul explained.

According to Paul, this experience showed Alex Fraser that there was only one option, to buy a TwisterTrac plant outright.

Paul further explained that VSIs are definitely the way to go for this application.

"Due to a VSI's impressive reduction ratio of up to 10:1, it is ideal for recycling glass into a sand product. Both our mobile TwisterTrac and our modular Twister AC210s have been used successfully in this application," he explained.

Pilot Crushtec's mobile TwisterTrac has a variable rotor speed of between 1 000 and 1 600 rpm and has a maximum feed size of 65mm for hard rock and 75mm for soft rock. The 1200mm wide discharge conveyor can offload to a height of 3,7 metres. While working, the TwisterTrac is about 14,5 metres in length, 3,2 metres wide and weighs 29 tons. Several rotor configurations provide throughput capacities between 100 and 225 tonnes per hour.

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Dust issues at Land Energy solved, foam dust suppression succeeds where mist system failed

Environmental Control Systems Ltd (ECS) recently supplied a bespoke foam dust suppression system to Land Energy Ltd. This system has been an instant success at Land Energy's wood pellet production facility in Bridgend.

Land Energy is leading the way in the production of wood pellets for use as a sustainable and clean source of energy in both domestic and commercial energy generation. In 2009 they completed an extensive re-engineering programme of their wood pellet plant in Bridgend. The site produces around 35,000 tonnes of wood pellets per annum.

The pellet making process comprises a number of steps and there is the potential to create dust at several points, with the risk of creating a nuisance to employees and potentially neighbours.

Misting fans were installed around the plant to suppress any dust and they could be switched on manually in the event dust levels were rising too high. Despite significant investment and an extensive installation, the fans never satisfactorily suppressed the dust. When the mist did manage to wet the airborne dust particles, it caused other problems as the dust settled all over the machinery and floor. The plant would then need to be cleaned down regularly which was not only costly in terms of labour, but waste disposal.

In mid -September, Mr. Peter Teasdale, a Land Energy Director, visited the ECS stand at the RWM 2010 show. Given his previous experience of mist dust suppression systems, Mr. Teasdale was understandably sceptical of dust suppression, but nevertheless listened and watched with interest a presentation on *"Foam Dust Suppression Systems at Work"*. Impressed with what he saw, ECS were invited to survey the site and then carry out a full scale demonstration at their facility in Bridgend.

The ECS philosophy is that “the best way to reduce airborne dust levels is to prevent the dust from getting airborne in the first place.” So rather than using mist to bring the dust down, ECS would apply a light foam to the material to dampen the fines using minimal moisture and thus prevent the dust from being released as the material is handled. The key to this technique is to apply the foam early in the process at a point which allows maximum mixing of the foam with the dusty material. For Land Energy, the optimum location to spray the foam was as the wood chip fell off the walking floor and on to the horizontal screw.

A demonstration was set up in early October and within half an hour of running the system, the outcome was plain to see, feel and breathe. The visible airborne dust levels were reduced dramatically and the effect on the product was negligible. In fact, much to the delight of the customer, foam consumption and moisture addition proved to be significantly lower than ECS' original estimates.

Land Energy ordered independent laboratory tests that have shown that the foaming agent has had no impact on pellet quality or specification.

At the beginning of November, an order was placed for a permanent installation.

The equipment, consisting of a foam generating unit and compressor, is housed in a purpose built block room, complete with lights, insulation pipe work and a smoke and heat detector.

The foam system is linked to the plant's control system and works seamlessly, applying foam to the material whenever the walking floor is discharging wood chip onto the horizontal screw auger, and stopping if and when the bin fills up too high.

The foam system has been running for two months now and the results are excellent. Operations Manager Byron Owen has been delighted with the system and has stated a number of benefits:

- Drastic reduction in airborne dust
- Reduced cleaning and handling of dust
- Reduced waste
- More comfortable environment for staff to work in

Mr Owen has also received feedback from lorry drivers, contractors and visitors to the site saying *“what a difference the foam has made!”* The Environment Agency has seen the unit in operation and were impressed with the system.

Raj Naik, MD of ECS UK, said *“We are pleased that we have been able to provide a neat solution for Land Energy.”* Airborne dust does not always have to be an inevitable consequence of handling high volumes of materials at high speed. The fast growing recycling industry is not immune to this problem. At Land Energy we have demonstrably proved that there is an innovative and effective solution available that is:

- Easily retrofitted to existing plant
- Easy to install
- Low maintenance
- Low cost
- Does not affect other products and other processes

www.hub-4.com/directory/1791

Finlay Group Supplies Space Saving Reclaimer for Grab & Deliver Ltd

A Durham-based waste recycling firm is enjoying the benefits of increased productivity and space saving features since taking delivery of a Terex Finlay 883 Reclaimer from Finlay Plant Northern.

Grab & Deliver Ltd, who has been operating for seven years, bought the three-way split screener to replace two individual machines, freeing up space on the Houghton-le-Spring site where they process inert waste.

Since the delivery of the track-mounted 883 Reclaimer - which features a raised chassis for additional height - production on the site has doubled.

Complete with a hardened steel pan apron feeder, the machine's screen box is fitted with 55mm heavy duty tines and a 10mm mesh, sorting waste into plus 55mm, 10-55mm and less than 10mm stockpiles.

The plus 55mm waste feeds directly into a crusher for further processing, while the 10-55mm is sold as bulk fill. The remaining fraction is soil which is sold for landscaping - only about 5 per cent of the waste is sent to landfill, this being mostly clay.

Charles Nairn, a director of Finlay Plant Northern, a Finlay Group company, said: *"Grab & Deliver Ltd came to us because they needed a machine that could be raised high enough to feed directly into a crusher. This ex-hire used machine fitted the bill."*

Peter Barrass is a director of Grab & Deliver Ltd, along with Thomas Dunne. Peter said:" The machine is brilliant - it has been flying - and it is doing twice the work the two other machines were doing.

"We looked at a number of other makes, but the three-way conveyor set up on the Terex Finlay machine fitted with our site layout, as well as the fact that it could feed directly into the crusher that we already had.

"As well as increasing production the machine is a lot quieter than the ones we had before and uses a lot less fuel.

"This is the first time we've worked with Finlay Plant Northern and we will be going to them again in the future."

www.hub-4.com/directory/1824

APR supply a McCloskey C40 Jaw Crusher for duties at SB Tippers

A family run business with over 40 years of experience; SB Tippers is based in Great Harwood, Blackburn, Lancashire - providing a professional service within the North West of the UK. Today it is one of the leading haulage contractors and plant specialists in the sector.

Specialising in bulk excavation, the company offers a wide portfolio of products and services to industry. These include: supply to local authorities, utility companies, construction, demolition, and landscaping markets and include the Environment Agency and the private sector.

Recently the company consulted Aggregate, Processing and Recycling Ltd (APR) of Tamworth and after consultation have invested in a McCloskey Mobile C40 Compact Tracked Jaw Crusher. Replacing an existing machine, the new C40 will be employed to crush asphalt, concrete and general C&D.

SB Tippers were very impressed with the compactness of the machine, the large crusher jaw size and the professional and attentive product backup and dedicated machine service that APR have supplied. Scott Bolton - Director, commented, *"We opted for the McCloskey C 40 because of its size and the fact that there are a lot less electronics on this machine than others on the market. Also APR have a good reputation for after-sales care."*

The C40 Jaw Crusher offers quality, durability, and productivity. With a fuel efficient 225hp CAT C6.6 engine, 40'' wide jaw and user friendly control panel with excellent machine diagnostics, the C40 provides contractors a highly portable option while meeting production expectations. An on-board true 40"x24" (1016mm X 610mm) jaw with reversible hydrostatic drive, reversible and swappable jaw plates and fully hydraulic closed side setting adjust and relief provides the necessary bite!

Featuring a folding Hardox hopper mounted over vibrating feeder with integral 2 step pre-screen the feeder rate can be regulated manually or automatically by the load sensing jaw. A standard 36" main conveyor can be hydraulically positioned, easily removable for maintenance and provides a large stockpile capacity. Weighing in at only 32 tonnes, the C40 is highly transportable. Standard specification includes overband magnet, crusher deflector plate and side conveyor.

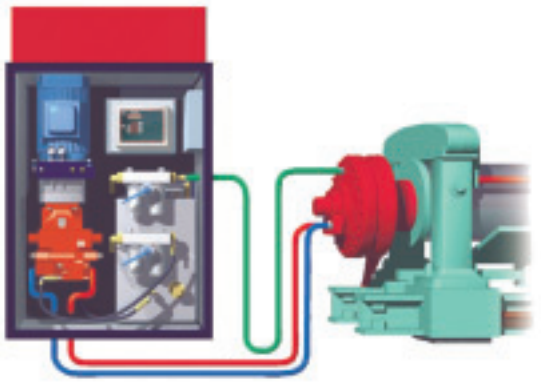
www.hub-4.com/directory/33

A drive towards competitive advantage

The modern production environment demands reliability and flexibility from plant equipment, allowing it to cope with the wide range of variables which may occur. This is essential if high productivity is to be sustained and profit levels to be maximised.

Rexroth puts you in touch with leading engineers in heavy systems engineering incorporating hydraulic drive systems and controls, servo drives and controls, pneumatics, linear and factory automation. The scope of Rexroth products for heavy engineering projects is unrivalled and thanks to its expertise in applications, provides a comprehensive service and unique solutions to all heavy industries.

Bosch Rexroth is renowned in heavy industries with its hydraulic systems technology and other products, enhanced now with unique Hägglunds direct hydraulic drives. This brings significant benefits such as starting with full load, low inertia fast response and accurately controlling torque to prevent overloads. This wide range of products and its formidable engineering knowledge, ensures the best drive and control solution for your plant.



▲ **A typical drive consists of a Hägglunds motor which will provide the torque required. A power unit with a variable displacement pump/motor set and necessary tank, filters and instrumentation is also included in addition to a control and monitoring unit and the inter-piping. The arrangement is versatile and flexible which enables customisation to suit the exact requirements of the application and environment.**

◀ **Belt conveyor for coal at power station**
This Amco Birtley belt conveyor at Tilbury Power Station in the UK is 200m long with speed range up to 2.5m/sec and capacity of 3000 tonne/hr of coal from the ship unloaders. Smooth dynamic acceleration and braking enables the loaded conveyor to stop quickly and prevent flooding the downstream conveyors.

◀ **Autoclave processing household waste**
This Joseph Rhodes autoclave is a large rotating drum with doors each end processing household waste under pressure with steam. A Hägglunds motor drives a single pinion against a girth gear in both directions and the drum has to be stopped accurately to engage a shot bolt before the auxiliary hydraulics opens the doors for loading and unloading.

◀ **Agitators or mixers in process industries**
Direct hydraulic drives are very suitable for agitators either top or bottom entry. They give excellent overload protection to the impeller arrangement with a wide speed range. They are far more compact and weight saving than the traditional gearbox which makes attending to the agitator shaft sealings much quicker and easier to maintain.

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Weir Minerals Cavex 500 CVX Hydrocyclones deliver engineering excellence for MAL

Established in 1995 MAL are a major European bauxite, alumina and aluminium processing company with its largest operations in Hungary.

All bauxite extracted from their mines in Hungary and Serbia is converted to alumina at the Hungarian site, with the company producing 300,000 tonnes of alumina per annum.

The existing system at MAL involved Warman 6/4 pumps transporting material directly from the mill. Whilst the pumps were performing well, Weir Mineral engineers recommended the introduction of two Cavex 500 CVX Hydrocyclones to provide greater efficiency to the system which were subsequently installed in August 2010.

The Installation

A major factor that limited the efficiency of the alumina production were the different compositions of the raw bauxite from Hungary and Serbia. The Serbian bauxite constitutes 30% of the raw material input and is substantially more abrasive than the domestic Hungarian material. This was contributing to approximately 31% of material that went through the mill process being over 90 microns and as such was unsuitable for the next stage in the alumina production process.

Improving recovery

A simple solution involved the installation of two Cavex 500 CVX Hydrocyclones which would allow for the automatic separation and retrieval of the larger solids that could then be transported back into the mill process to break them down further. This had the benefits of eliminating waste, underpinning a more efficient system and increasing the overall system recovery.

The cyclones were installed at an inclination of approximately 35° from the horizontal to coarsen the cut point and also to maintain a more stable underflow. Due to the size of the solids and the density of the liquor, the maximum underflow concentration would be ~62% by weight solids. This underflow density also determines the density of the overflow stream.

Since installation, the cyclones have continued to provide a high level of performance, achieving 1200g/l with an 80mm spigot. With a spigot lifetime of approximately 700-800 hours Weir Minerals have continued to develop a good working relationship with MAL.

Technical Details

Cavex Hydrocyclones offer many slurry applications in the mining and mineral processing industry.

Providing closed circuit grinding classification for improved efficiency, reduced wear and higher capacity an installation would benefit from improved classification ahead of other process equipment such as flotation cells, magnetic separators, spirals, hindered settling classifiers etc.

Cavex Hydrocyclones also provide better dewatering and desliming efficiency, reducing product loss and improving product recovery.

Featuring unique laminar spiral inlet geometry designed to deliver maximum efficiency; Cavex Hydrocyclones provide maximum capacity and longer wear life than conventional involute or tangential feed hydrocyclone designs.

Not just simply a cone modification, the Cavex Hydrocyclone is designed with an entirely new feed geometry that substantially increases hydraulic capacity whilst minimising localised wear on the feed chamber and vortex finder. These design improvements result in lower operating costs and fewer hydrocyclones required for a given duty.

For grinding circuit applications, Cavex Hydrocyclones increase circuit capacity by minimising the quantity of fines bypassing to the underflow stream. These effects are achieved by maximising the air core diameter created within the rotating mass of fluid in the hydrocyclone and are proven in both laboratory testing and full scale plant operation.

How do Cavex Hydrocyclones reduce wear and increase capacity?

The design of the Cavex Hydrocyclone laminar spiral inlet geometry provides a natural flow path into the hydrocyclone. This unique shape has no sharp edges, no square corners and allows the feed stream to blend smoothly with the rotating slurry inside the chamber.

The end result is a greatly reduced turbulence throughout the whole hydrocyclone creating more even wear, longer life and a more efficient classification. In conventional hydrocyclones slurry bursts into the cylinder with no flow control and the resulting turbulence is responsible for gouging the liner walls.

www.hub-4.com/directory/507

MATERIAL PROCESSING SOLUTIONS

The Terex® Finlay C-1540 cone crusher is available in two configurations; the Finlay C-1540 and the Finlay C-1540RS, with an onboard recirculating screen.

The Finlay C-1540 incorporates the proven Terex® 1000 cone crusher with direct variable hydrostatic drive, automatic tramp relief and hydraulic closed side setting (CSS) adjustment. Additional benefits include, rapid set up time, ease of maintenance, high reduction ratio, high output capacity and advanced electronic control system.

The C-1540RS variant of this machine features an innovative on board recirculating system and detachable sizing screen.

Both machines can be supplied with the patented pre-screen option which allows the fines to be removed prior to being fed to the crushing chamber which offers higher production with lower cost per ton wear and running costs. Coupled with the automatic metal detection and a purge system to protect the cone, the Finlay C-1540 offers the best features in its class.

Features:

- Advanced PLC Control system with easy to use logic.
- Direct hydrostatic drive with Variable speed control offers multiple application options.
- Patented independent pre-screen increases throughput and decreases cost per ton wear and running costs.
- Automated metal purge system.

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UWT (UK) Ltd. Measures Up to the Job!

UWT UK Ltd. was contracted to supply and install a full continuous level monitoring system for Aberdeen Grain, one of the UK's largest grain storage facility.

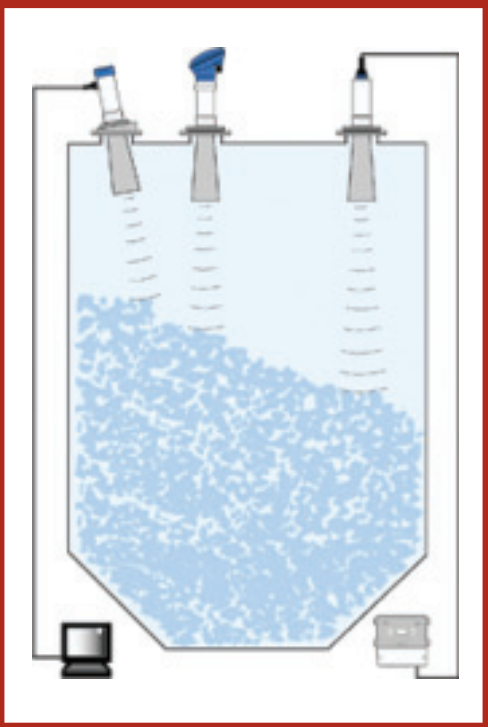
Aberdeen Grain recently installed a new barley drying plant at their Whiterashes site in Aberdeenshire and during harvest, the plant operates for twelve hours per day, seven days a week. Three new 420 tonne silos provide a drying capacity of 7000t of feed grain and 3000t of malting barley. With high volumes passing through the silos, it is essential that the volume of each silo can be monitored in real time and with complete accuracy during filling and discharge.

UWT UK Ltd addressed the range of conditions to consider with this application (caking, dusty environment, material with changing temperature and humidity, explosive, diverse grain sizes, specific space constraints, high flows and large measurement distances) and installed a Nivowave NW5015 acoustic wave level measurement system on each silo.

Accoustic wave technology is used to generate sonic waves from 5KHz to 50KHz, which reflect off the surface of the material to be measured and cause an echo. The time delay between the sent signal and received echo is analysed and temperature compensated to provide the full level display and output signal.

The Nivowave NW5015 is a 15kH transducer with a 4-20mA output and is linked via a Modbus connection and the Nivowave system is able to show via a touch screen display all three silo volumes during filling and discharge. The output can be shown as a percentage, level or volume and has a10 year data retention internal memory.

With a -40ºC to +70 ºC IP67 housing and built in digital display for easy commissioning the Nivowave NW5015 has proven itself to be the right product for Aberdeen Grain. Steven Mearns, Store Manager at Aberdeen Grain states 'As UWT (UK) clearly claims, their product is simply working which is the result we wanted.'



www.hub-4.com/directory/12551

Pacepacker's palletising solution addresses changing market requirements

Ellingham Grain upgrades Pacepacker equipment to support export growth

Suffolk based Ellingham Grain, an agricultural commodities packer of dried pulses and beans, has improved product presentation and increased their capacity by upgrading two 15 year old Pacepacker sack placing and packing lines with new MKIII ticket dispensers and a FANUC R2000 robotic palletising system.

Ellingham Grain's Managing Director Anthony Smith comments: *"In recent years we have seen a substantial growth in export markets, particularly in the Middle East and Europe, and subsequently our business has grown from 12,500 to 22,000 tonnes of pulses and beans in the last 3 years. Our desire to increase capacity, coupled with recent customer demand for a more professional looking pack, made us look at how we could upgrade our existing Pacepacker packing lines, which have served us so well for 15 years."*

Upgrades to Pacepacker's two existing bagging lines, which included a ticket dispensing system that unfolds, guillotines and attaches a premium product label onto woven polypropylene sacks ranging from 10kg to 25kg, achieved the desired pack presentation, reduced operator involvement, and increased throughput by 25%. "Not only has the dispensing system enabled us to use our own in-house designed and printed label to consistently produce a premium pack, it no longer needs operator intervention to place or adjust the label during the stitching process. This simple upgrade has given our equipment a new lease of life and automated what was once a labour intensive process which in turn has created the additional capacity that we were looking for," remarks Anthony.

Completing the line, Ellingham Grain used Pacepacker's expertise as a FANUC Strategic Partner to explore robotic palletising options which could deal with the inherent inconsistent handling properties of the polypropylene sacks and one which would fit into a restricted production area with limited headroom. *"We specified the highly flexible and compact six-axis FANUC R-2000iB/210F with a payload of 210kg, repeatability of 0.5mm and a working reach of 2650mm,"comments Pacepacker Sales Manager Ian Merchant. "Inside the robot grippers we incorporated an integral top grip pressure plate, which pushes down on the levelled bag as the grippers pick it up, so that the bag does not distort. This design feature ensures that the product is not displaced and overcame the problem of handling Ellingham's non-ridged bags,"* adds Ian.

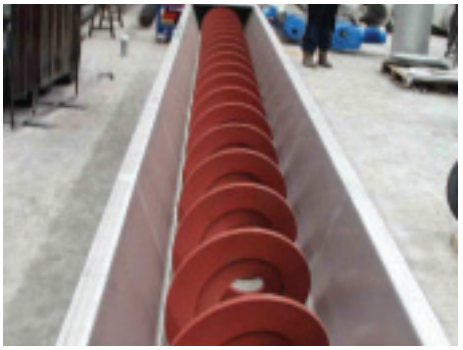
"Palletising is no longer a labour intensive process; the robotic system has enabled us to make better use of our staff in other areas of production to aid our expansion," explains Anthony. "I'm pleased to report that it consistently creates an accurate and uniform neat stack of 45 sacks per pallet and has increased our throughput by 50%," concludes Anthony.

Pacepacker's MKIII ticket dispenser upgrade can be retrofitted to most Pacepacker sack closing lines currently in the field.

www.hub-4.com/directory/6746

Guttridge launch a new range of Centreless Screw Conveyors

As a leading UK manufacturer of bulk handling equipment Guttridge has added to its extensive portfolio and launched a new range of Centreless Screw Conveyors as a solution for conveying material with difficult characteristics.



The new range will efficiently handle adhesive and wet materials such as pulp materials, waste sludge and soil that have the tendency to tangle with, or stick to a shafted screw conveyor. Highly abrasive materials including gravel, sand, cinder, crushed rock and materials with large or mixed size particles including wood chips, biomass, and paper are also handled with ease. The new range will also convey very delicate and flowing materials including powder, chemicals and ash.

The introduction of Guttridge Centreless Screw Conveyors facilitates a huge range of options in terms of direction and distance. Available in either horizontal, inclined or vertical options they can provide high quality conveying up to very long distances and in comparison to other conveying options they offer lower investment and operating costs.

Innovative design features include the omission of a central shaft which allows higher filling rates and low speeds, making the Guttridge Centreless Screw Conveyor highly efficient with less wear and consequently less maintenance. Additionally, uncomplicated reliable operation with no end or intermediate bearings facilitates efficient and direct transfer of material and reduced requirement for major maintenance work.

Guttridge can also offer bespoke installations which can be designed and constructed for any unique application.

www.hub-4.com/directory/367

Modular Conveyor Guards Improve Safety & Productivity

An industry leader in delivering safer, more productive bulk materials handling has announced a new generation of modular conveyor guards, enabling workers to do their jobs with reduced risk and greater efficiency, while helping to ensure plant compliance with safety standards and regulations. EVO® Conveyor Guards from Martin Engineering provide a simple, flexible and cost-effective solution to conveyor guarding, with component designs to help keep personnel safe by restricting access to moving parts and pinch points.

The user-friendly design of the new guards is provided by standardized panels that take a systematic approach to guarding, with the flexibility to fit virtually any conveyor design. Wedge clamps allow the guarding panels to be removed and reinstalled quickly and easily, so systems can be expanded or relocated as needed. A variety of wedge bolts and bracket sizes are available to suit a wide range of mounting options.

EVO® Conveyor Guards are self-supporting and feature a rugged modular design that installs on supplied angle iron structure, eliminating the need to attach directly to conveyor equipment. Integrated handles reduce the number of parts and tools required.

The new conveyor guards conform to OSHA 29 CFR 1910.217 when installed with a minimum of 5.50 inches of clearance between the guard opening and hazard. They also comply with

MSHA Safety Standards 56.14107 (moving machine parts), 56.14110 (flying or falling material), 56.14112 (guard construction), 75.1722 (mechanical equipment guards) and 77.4400 (mechanical equipment guards).

Guards are available in a range of sizes, from 11" x 17" samples up to 36" x 50" panels, and can be used in a variety of combinations to accommodate unique and even custom-designed conveyor systems. They can be specified in powder coated orange or painted safety yellow, and can be purchased with or without mounting hardware.

EVO® Conveyor Guards are an economical way to improve safety awareness and reduce worker injuries. They are viewed as a logical extension of Martin Engineering's commitment to designing solutions that optimize conveyor performance, while helping bulk materials handling facilities reach their goals for safety, regulatory compliance and operating efficiency.

Specific launch dates of this new product may vary slightly, depending on the country / region.

Because training is such an integral part of safety, Martin Engineering has been a pioneer in conveyor training for decades, and the company's FOUNDATIONS™ Workshop series has been teaching bulk-materials handling personnel how to operate and maintain clean, safe belt conveyors for nearly twenty years. With three distinct levels available, all programs offer the opportunity for customization/localization to feature specific images, conditions and problems from the customer's site. The presenters are highly trained, with many years of hands-on experience around conveyor systems.

Founded in 1944, Martin Engineering is the world leader in making bulk materials handling cleaner, safer and more productive. The firm is headquartered in Neponset, IL, with global reach from operations in Brazil, China, France, Germany, Indonesia, Mexico, South Africa, Turkey, India and the UK. Exact dates of this product introduction may vary by region. Global representatives for Martin Engineering can be found at www.martin-eng.com/rep-finder.

www.hub-4.com/directory/534

Rapid Twin Shaft Mixer Produces Concrete for Oil Refinery Project, Saudi Arabia

The twin shaft concrete mixer, manufactured by Rapid International Ltd has been installed by distributors, Al-Kifah, to produce 1,560m3 of concrete for one of the most important oil refinery projects in the Eastern Province of Saudi Arabia.

The Rapid twin shaft was chosen over competitor models due to its unique bearing design and the durable inner wear chamber that is not currently available in other models. The installation at the batching plant in Jubail has greatly increased production of concrete and the distributors, Al-Kifah are more than confident that the quality of the concrete produced will meet the high standards required by their customer.

Mixer Washout System

Al-Kifah, have also installed the mixer washout system, the Rapid Jetwash RJW2 two-pump model to accompany the twin shaft. This model is ideal for the twin shaft mixer. The box shape of the mixer means that two jet heads are able to reach all points within the mixer. This high pressured mixer washout system reduces the washing time from an average 45 minutes to a 4 minute cycle or 8 minute double cycle.

The system reduces safety risk of staff inside the mixer and regular cleaning and maintenance of the machine will certainly increase its lifespan.

Al-Kifah has been distributing Rapid products for over 15 years and was delighted when it was able to add the new twin-shaft concrete mixer to their current range of Rapid products. The company itself is a well-established and reputable batching plant manufacturer with contractors all over the Middle East. They have always ensured that the mixers they install into customers plants are of high quality and Rapid International's products are always able to meet this specification.

The twin shaft concrete mixer has become a popular choice with many contractors across the Middle East with its faster mix times. Also, with its compact design, it fits easily into mobile plants or reduces space on mixer platform.

www.hub-4.com/directory/5066

Owen Pugh Scores as Sandvik Takes the Corners

A North East of England company is using a Sandvik hydraulic breaker to extract vital minerals from a quarry that is approaching the end of its long and productive life. Carrying out primary breaking duties, the Sandvik BR 4099 is allowing Owen Pugh Aggregates to work sections of the quarry that had previously been inaccessible.

With its sea views, cliff-top walks and picturesque lighthouse, Whitburn in South Tyneside is not, perhaps, the first place you would expect to find an innovative quarry and mineral extraction operation. But just a few metres from the quaint holiday destination enjoyed by many in the North East of England, quarry operator Owen Pugh Aggregates is extracting the last vestiges of value from Marsden Quarry, a 54-metre deep pit that has been supplying magnesium and calcium lime to the local area and export markets for more than 150 years.

Heritage & History

The Grade II-listed lime kilns and neatly landscaped entrance to Marsden Quarry are an early indication of the heritage and longevity of a site that can trace its magnesium limestone extraction history back to the mid 1800s. Today, the 12-hectare quarry produces in the region of 150,000 tonnes/year of magnesium lime for agricultural applications in export markets including Belgium and Holland. The site also produces around 40,000 of calcium lime for the domestic UK agricultural sector, along with around 120,000 tonnes/year of construction grade limestone for aggregates applications in civil engineering.

But with around seven years of reserves remaining, Marsden Quarry is rapidly approaching the end of its natural life, and operator Owen Pugh is turning its attention to some less accessible and previously unworked areas of the site. *"Having exhausted most of the quarry's primary reserves, we are now working the corners, and that takes us close to the old lime kilns and neighbouring houses to the South of the site,"* explains general manager Andy Mountford. *"We have, therefore, stopped blasting in these areas and we have had to find an extraction that causes considerably less vibration."*

Hard Rock

The low vibration solution came in the form of a 3,380 kg super silenced Sandvik BR 4099 hydraulic breaker that is allowing Owen Pugh Aggregates to work sections of the quarry that had been inaccessible to the drill and blast process.. Utilising a new operating principle, the breaker has been matched to both the application and to the 47 tonne Hitachi hydraulic excavator upon which it is mounted.

The Sandvik breaker is used to break out the overlying calcium limestone, beds of which vary in thickness from 10 to 25 metres. *"The calcium limestone is extremely hard,"* comments Owen Pugh's business development manager, Philip White. *"But we have equipped the BR 4099 with a limestone chisel and it makes light work of even the hardest rock."* The Sandvik BR 4099, which benefits from enhanced hydraulic efficiency for an exceptional power-to-weight ratio, utilises the VIDAT (Vibration Dampened Tierods) system to provide improved reliability and reduced downtime. A state-of-the-art sealing system, enhanced lubrication and longer service periods also help reduce operating costs.

Mountford and White are clearly impressed by the low noise, low vibration characteristics of the Sandvik breaker. But they are even more impressed by the productivity and cost savings they're achieving by using the hammer in these inaccessible areas of the site. White asserts that the Sandvik unit is producing in excess of 700 tonnes of broken rock per day. With the overlying rock broken out, the breaker is then switched for a ripper tooth or bucket to extract the softer magnesium limestone beneath, maximising the utilisation of the Hitachi excavator.

"Even setting aside the vibration concerns, blasting in these corners of the quarry would have been slow, delicate and considerably less economical," Andy Mountford concludes. *"Obviously, primary breaking would not have been a viable option in the main parts of the site. But based on our calculations, I believe that the Sandvik breaker has reduced our extraction costs by as much as 50 percent in these difficult areas."*

www.hub-4.com/directory/296

It's Showtime at Blue Spares!

Blue Spares is the spare parts specialist company within Blue Group which is an appointed distributor for a wide range of world-class crushing, screening, materials handling and recycling plant and equipment. The company has recently unveiled larger premises, increased under-cover storage capacity and has installed a Kardex automated system that is widely considered to be the ultimate in state-of-the-art computer controlled parts storage, selection and picking. Blue Spares will be holding an open day event on Wednesday 29th June and can be contacted on 07765-003784 or sales@bluegroup.co.uk for details and an invitation to the event. In addition to tours of the facilities and a demonstration of the impressive Kardex system, Doppstadt and Powerscreen equipment will also be on display.

During 2010, Blue Spares redeveloped their premises, constructed a brand new warehouse facility and installed the fully automated and computer controlled Kardex Shuttle stock picking system. In all, Blue Spares invested around £500,000 in this impressive project to hone and enhance even further the after sales product support they provide to the Blue Group's valued customers. Off-the-shelf availability from considerably enlarged under-cover storage, plus a wide range of crusher, screener and shredder spares for most leading makes now benefit from this significant investment. Blue Spares now offers what is probably the most modern spare parts service of its kind in the UK quarrying and recycling markets.

The remarkable new Kardex Shuttle system is undoubtedly the key to their considerably enhanced and proactive spares service. A high density vertical lift system, Kardex not only maximises on ceiling and shelf height but can carry weights of 60 tonnes or more. This frees up floor space and allows extra storage area for increased line items stocks. Kardex simultaneously measures, weighs and allocates product for storage in the most space-efficient location within the Shuttle. Greatly increased picking speed - up to 130 items an hour - automatically presents the required part by bringing the correct “tray” to the access level. The computer software programme instructs the operator how many items to pick and also allows the system to sort stock into optimum picking sequence in order to minimise machine travel time.

Genuine OEM parts are provided by Blue Spares and the economy of quality that this represents means that, whether it's spare parts for rebuild to keep the older kit at work or replacement wear parts to minimise downtime, operatives can provide quality spares that fit first time even faster, more efficiently and cost-effectively than ever before.

Blue Spares' Managing Director Sean Warburton says “We look forward to welcoming guests to our open day on 29th June and can promise an informative and impressive event. We've always prided ourselves on the best possible parts holding with a fast response to our customers. The past couple of years have been extremely successful for Blue Spares and our Open Day will be an ideal opportunity to clearly demonstrate our commitment to providing what we reckon is the best possible spare parts operation of its kind in the UK crushing, screening and recycling markets”.

www.hub-4.com/directory/2260

blue™

CMS Cepcor launch newly designed Goodwin Barsby HD Super Teeth Jaws

CMS Cepcor has launched the newly designed Goodwin Barsby HD Super Teeth Jaws to suit the current range of Mark 5 Single Toggle Jaw Crushers.

The new HD Super Teeth jaws can also be retro-fitted into 'classic' build machines and CMS Cepcor will continue to stock the original standard teeth sectional jaw plates alongside the new HD Super Teeth jaws.

The Goodwin Barsby range of Crushing Plant offers proven reliability with more than 125 years of design, manufacture and engineering. The current range of Goodwin Barsby Mk5 Series Jaw Crushers, Mk5 Series Granulators, Vibrating Vitex Screens and Vibrating Grizzly Feeders are UK manufactured and have evolved by improving on the tried and tested designs, without compromising build quality for cost savings.

Based in Coalville, Leicestershire, UK, Crusher Manganese Steels Limited are Europe's largest aftermarket manufacturer and supplier of premium quality Crusher, Screen and Asphalt Plant Spares & Service. Genuine replacement part orders are despatched worldwide to the Mining, Quarrying, Demolition and Recycling Industries from their extensive stock inventory.

www.hub-4.com/directory/1761

DUO project for CEMEX UK at Doveholes proves a winner!

A recent Duo Unit Cost Processing project at Dove Holes quarry has proved to be a great success. Owned by CEMEX UK, the building materials supplier, Dove Holes Quarry in Derbyshire is a limestone quarry which produces approximately 6,000 tonnes of crushed limestone fines per week.

DUO's installation, which has been successfully managed by the DUO processing team for the past two years, ensures that the filler content in the Limestone fines is washed out to bring the material up to sand classification standards. The crushed fines, which would previously have been used as a fill material, are now of a high specification to be utilised as a fine aggregate material.

This processed material is now suitable for use in concreting aggregate. The high specification sand is now used in CEMEX's in-house batching plants as a replacement for natural sands. This quality product is then used by CEMEX UK in the manufacturing of concrete railway sleepers.

The simple yet effective installation used to create this added-value product consists of a Commander 510 feeder, a Finesmaster 120 and a stockpiling conveyor. The Commander 510 provides a steady feed of material to the Finesmaster 120 which removes silts, slimes and clays before dewatering the washed sand so that it can be stockpiled for use. The entire installation is powered using highly efficient electrical motors which reduce energy costs.

Through reviewing material analysis results and applying their years of experience in processing crushed fines DUO designed the configuration of the installation and day-to-day processes of running of the plant specifically for the Dove Holes quarry site to ensure maximum efficiency and the highest quality output possible.

CEMEX, realising the performance and cost effectiveness of the installation, chose to purchase the plant. This demonstrates again the flexibility of DUO's equipment and their ability to provide installations designed to meet the individual requirements of projects.

www.hub-4.com/directory/928

Lafarge Greenhithe achieves production target with a screen from TEMA (Machinery) Ltd

At the beginning of 2011 TEMA (Machinery) Ltd. supplied Lafarge Aggregates with a new Siebtechnik Rekord circular motion screen for their Johnsons Wharf Plant at Greenhithe in Kent.

The new 1.8 x 6.0m DD Rekord screen replaces the primary double deck screen that had proven troublesome, Lafarge Multi Unit Manager, John Hilton, wanted the new machine to pick up the existing foot print without needing any modifications to the structure or chutework and so Siebtechnik designed a bespoke screen based on the company's tried and tested Rekord screen design with a fully bolted construction, addressing all the issues of the old machine.

The new screen has extensive rubber and polyurethane protection on all surfaces exposed to material flow to combat the aggressive nature of marine dredged ballast. The machine supplied was grease lubricated, however it can also be specified as oil lubricated to the customers individual preference.

Removal of the old screen and installation of the new machine was carried out by GLW Engineering Ltd of Northfleet, Kent over the Christmas shut-down.

With the new screen fully operational, Lafarge are currently achieving their production target of 270,000tpa.

Tema Isenmann supplied their WS85 Modular Polyurethane system to both decks. A special feature of the WS85 system is the method of fitting the rails to the machine crossmembers. Because all the fixing bolts are within the rail, there is no need for cleats or exposed bolt heads to wear away or fail, the rails are protected by deep skirt Nockin bars.

For more information on Siebtechnik Screens, contact TEMA (Machinery) Ltd. either by email sales@tema.co.uk or by calling 01327 262600

www.hub-4.com/directory/12622

JC1 Jaw Crusher

Designed and developed by the engineers from Glen Creston in conjunction with our customers' engineers the JC1 is a small, all stainless steel construction, Jaw Crusher originally intended for a special re-cycling application for the electrical generation industry.

The JC1 crusher is fitted with tungsten carbide jaw plates and side liners. It has a 0 - 10mm vernier jaw gap adjustment to allow accurate control of the product particle size and will accept feed up to 40 mm. The movable jaw plate is also fitted with a system to prevent crusher damage in the event of un-crushable material being introduced.

The JC1 can also be fitted with a stainless steel base frame complete with discharge tray that is sealed against the frame when correctly inserted and a *"tray present"* sensor that prevents crusher operation if the tray is not inserted correctly.

The JC1 can be driven by either a single phase or three phase 1.1 kW motor and power transmission to the jaws is by standard V belt.

Because all contact parts are either Tungsten carbide of stainless steel the JC1 is also suitable for crushing any material where contamination needs to be avoided.

For additional information on Glen Creston products, please visit www.glencreston.com

www.hub-4.com/directory/9239

Addition to CDE RotoMax Logwasher range

The RX80 has been added to the range of CDE RotoMax Logwasher for application in the construction materials and mining sectors. The new model has a capacity of 80 tons per hour and can be applied in the processing of a variety of materials such as sand and gravel, crushed rock, construction and demolition waste material as well as a range of mineral ores.

The RX80 has been introduced following the launch of the RX150 model in September last year and is designed for the processing of material containing high levels of plastic clays which need to be broken down and removed from a feed material.

"The RX80 has been installed on a number of projects and is typically employed following initial screening of the feed material - more often than not this is done by our M2500 mobile washing plant" explains Kevin Vallelly, CDE Product Manager for the RotoMax Logwasher. *"These initial projects have involved the processing of construction and demolition waste material but we are actively pursuing several projects in the ore processing field following the addition of the new model to the range."*

The RX80 has 118 high cast chrome paddles mounted in a spiral arrangement on dual shafts. The specification of the paddles offers superior wear resistance with a processing life in excess of 100,000 hours while the spiral arrangement of the paddles has the advantage of reducing intermittent shock loading and reducing the power requirement for the RotoMax.

"The specification of the paddles is key to the success of the RotoMax with the high cast chrome offering more than five times the wear life of other materials" says Kevin Vallelly. *"The effect of this is to offer operators a much lower cost per ton of processed material."*

The RotoMax range also includes a hydraulic clutch as standard to allow for start up under full load while the fitting of a temperature sensor affords additional protection to the bearings at the rear of the RotoMax. *"All of the models in the RotoMax range are designed to ensure ease of maintenance and ensure the operational time of your plant is maximised"* says Kevin Vallelly.

Further details are available on the CDE web site at **www.cdeglobal.com**

www.hub-4.com/directory/163

Riverside Machinery Prepare For The Launch Of The Neuenhauser Mobile Drum Screen

Riverside Machinery Ltd is pleased to announce the eagerly anticipated launch of the Neuenhauser Mobile Drum Screen.

The Neuenhauser brand which normally is associated with star screens have decided after growing demand from their dealer network and existing star screen customers who felt that a drum screen was needed for certain applications.

For example producing a -10mm for bagging compost - A trommel has certain advantages over a star screen mainly being the ability to make a specific size of product.

Rather than continue to lose orders to rival manufacturers we can now offer the complete screening solution.

The Neuenhauser NH6020 E will be released in mid June 2011 and we are now registering demonstrations with customers who wish to see the benefits the NH6020 E can offer.

Benefits include:

- Compatible with drum screens of other manufacture
- Diesel-Electric drive thereby keeping running costs to a minimum
- Swing out engine unit and large access doors
- Mains Power operation possible

If you would like to take advantage of a free demonstration or would like more information please do not hesitate to contact us.

www.hub-4.com/directory/12459

European Attachments Group Launch New TechnoAlpin V7

European Attachments Group the Manchester based Importer supplying the UK and Ireland with TechnoAlpin Dust Control Turbines has just launched a new range of Turbines for the European and UK markets.

Says Garry Adey Group Managing Director “we have been working very closely with TechnoAlpin in developing the product range to suit all levels of customer's requirements. We have now developed a Turbine which sits right in the middle of our existing DCT5 and V12 turbines the concept behind this new development was purely driven by customer needs and cost”

The new V7 has all the options of the V12 Turbine including Wireless remote, Double Boost pump, 36no Multinozzle atomizing spray head, 360 degree Oscillation or programmable Oscillation and 52 degree inclination, all these come as standard.

The new V7 will spray nebulized water up to 40 meters from the machine via its new designed 7Kw fan and 4Kw pump which increases pressure to over 20 bar pressure. This combined with our patented 36 multinozzle head allows it to efficiently cover areas with dust problems without wasting water.

The V7 uses the same patented technology as the other turbines in the range, where it atomizes the water directly in the centre of the airflow this allows the turbine to encapsulate the water in the centre thus not allowing it to be disturbed in the dirty air leaving the turbine and dropping water where it is not needed. This technology can save up to 80% on wasted water which does not reached the intended area of dust creation.

For more information on this new range of TechnoAlpin please contact the sales team on 0845 4745670 or Garry on 00 44 (0)7597033512

www.hub-4.com/directory/13946

New generation jacking systems from Hi-Force

Tough jobs require ToughLift. Sounds like a cheap sales slogan, but in the case of Hi-Force ToughLift jacks it is nothing but the truth...

Designed to perform under the toughest of circumstances, and a proven performer in mines and quarries throughout the world, the Hi-Force ToughLift jacking system offers the easiest and safest method of lifting mine and quarry material haulers, during routine maintenance and vehicle on site breakdown.

The Hi-Force ToughLift range offers a choice of 12 models with lifting capacities ranging from 50 to 200 tonnes and a choice of hydraulic lift height options on the 100 & 150 tonne versions. All models are powered by an integrated electric driven or air driven hydraulic pump unit and feature a remote, push button hand pendant control unit with a 5 metre control cable for easy operation, safely and remotely from the jacking point. The Hi-Force ToughLift jacking system incorporates a number of patented features, including a multi-positional transport & lifting handle and a unique swivel jacking base to guarantee safe and correct positioning of the lifting cylinder under the vehicle, prior to lifting it up. Fitted with large diameter wheels and solid rubber tyres for easy manoeuvring, all models are narrow in width, enabling them to fit into confined spaces whether in use or in storage, and have the smallest footprint size compared to all other competitor brand models.

There is also a large variety of optional extra's available to compliment the Hi-Force ToughLift jacking system which include mechanical load holding blocks, swivel load caps, mechanical locking and slip lock extensions, all of which add further features and safety benefits for the operator. Hi-Force also offers a range of hydraulic tyre bead breakers and ToughLift accessory toolbox trolleys to further compliment the ToughLift jacking system.

As plant operators in quarrying, mining, construction, railways and many other industries demand a minimal maintenance and repair downtime of their capital intensive equipment, the Hi-Force range of ToughLift jacks are indispensable and they are rapidly becoming known as the strongest and most versatile jacking system in the world!

With this latest addition to the comprehensive Hi-Force product range, this UK based manufacturer of hydraulic tools and bolting products offers a complete, high quality, product range which is being used on a daily basis, in a wide variety of industries worldwide.

For more information on the ToughLift range, please visit www.hi-force.com

www.hub-4.com/directory/397

ConveyorTek launch low friction Kryptane 'Fold and Seal' skirting

ConveyorTek are now stocking a high performance kryptane skirting solution that is delivering extremely successful performance results.

'Fold and Seal' skirting can help to eliminate material spillage and is also great at containing dust. One of the key areas often overlooked in designing modern conveyor systems is the additional frictional resistance added by traditional rubber skirting. Fold and Seal can help to reduce this frictional drag and on long conveyors can help to reduce the conveyors power consumption.

Key Benefits

LESS FRICTIONAL RESISTANCE - up to 60% less coefficient of friction compared to rubber (Reduction in power consumption)

SUPERIOR WEAR RESISTANCE

EASY TO INSTALL fits easily into most existing skirt clamp systems

MATERIAL and DUST CONTAINMENT in one solution

NON POROUS MATERIAL means less top cover belt damage

For further information please contact the ConveyorTek sales team at sales@conveyortek.com

www.hub-4.com/directory/11979

HUB™

ASPHALT PLANTS RECYCLING, STORAGE SYSTEMS FOCUS

RED DRYER

(RED) RAP ECOLOGICAL DRYER

The ultimate asphalt recycling solution

Bernardi Impianti Patent - MI 2008A 002312

RED DRYER
(RED) RAP ECOLOGICAL DRYER
The ultimate asphalt recycling solution.

The patented RAP Ecological Dryer (RED DRYER), will accept up to 50% recycled asphalt pavement (RAP) introduced directly into the dryer along with the virgin aggregates.

The counter flow-type dryer drum has been developed using new technology, which includes a special high temperature combustor drum and a internal blading system.

The RED dryer will accept a mix of RAP and Virgin aggregates fed direct from the existing cold feed system, and removes the need for any secondary RAP elevators, feeders or drying equipment. The RAP and virgin aggregate blend is retained in the specially designed internal blading system, so there is no direct contact between the flame and the RAP, thus removing any thermic shock to the bitumen and allows the release of its moisture inside the drum.

The innovative combustor inside the dryer is manufactured using a special high temperature stainless steel which protects the materials being dried (virgin aggregates and RAP) from direct flame irradiation. This unique system aids the elimination of harmful bituminous steams and dust through post-combustion, and optimises combustion and decreases fuel consumption. The radiated heat generated by the combustor is used to heat the blend of materials, and thanks to the softening of the bitumen and the release of humidity, a mixture of virgin aggregates covered with bitumen is obtained. The blend of RAP and virgin aggregate is also sufficiently dry to avoid problematic obstruction or adherence to the plant's elevators and screens. Therefore offering the ability to screen and size your blend , which in turn offers greater flexibilty when designing your asphalt mix.

Berkshire Engineering supplies ltd the UK agents for Bernardi Impianti, installed the first RED DRYER at Colemans quarry in Somerset for Aggregate Industries, where the plant is now successfully processing asphalts containing high percentages of Recycled asphalt on a daily basis, because of the RED DRYER. The second RED DRYER is being installed in April 2011 at Cornelly Quarry in Wales, for Tarmac ltd, where they will be looking to enjoy many of the RED DRYER's ecological benefits, which include reduced power and fuel consumption as well as high percentage asphalt recycling.

The RED DRYER is a true innovation which will significantly help to promote the use of recycled asphalt in the UK.

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www.hub-4.com/directory/11637

Gotland is Benninghoven's partner for waste removal systems

Benninghoven, the world's leading manufacturer of asphalt systems, has found a preferred partner to help its customers achieve effective and localised waste removal from around an installation: Gotland.

Founded in 1909 in Germany, Benninghoven diversified into the field of industrial combustion technology in the 1950s, and by the 1960s Benninghoven was making burners, dryers, bitumen systems and mastic asphalt equipment. The company now manufactures in both the UK and Germany, and exports asphalt systems all over the world.

Benninghoven's search for a waste removal system partner.

In the process of completing and commissioning a new asphalt plant installation for its customer FM Conway in Erith, Kent, Benninghoven's John Stevens needed to find a company that could supply and install an efficient fixed pipework system powered by suitably powerful and flexible suction equipment.

Asphalt plant needs constant cleaning to keep all the moving and static parts free of build up and dust, but the heat in some areas and the awkwardness of reaching certain parts means operatives need both the means to access those places safely and the suction power to remove the waste they find there. On top of these requirements, the asphalt plant in question was some 38 metres high and waste removal was required at six levels within the plant, so the suction power generated by a machine at the base needed to be transferred with minimal loss of suction all the way to the top.

The power behind the Gotland solution: the BagVAC

The solution proposed by Gotland's engineers was a BagVAC both to power the fixed pipework system, and to provide a flexible waste removal machine that could be moved with a forklift to wherever it was required. The BagVAC's fully enclosed system means that all the dust and waste from spillages or whatever go straight into the system via the cleaning head and into a one tonne Eurobag or skip for either disposal, or in this case, recycled back into the asphalt processing system.

To power all six levels of the asphalt plant, the Gotland-designed fixed pipework system has inlet valves on each floor, and with the BagVAC's powerful suction applied via the 60' suction hose attached, anywhere can be reached safely by an operative cleaning up the dust and stone spillages from any of the various inspection points. The typical mix is around 90% dust and 10% stone.

Why Gotland? 'More than adequate power…a good partner to work with…'

John Stevens has been impressed with the results of the Gotland equipment that he's seen for himself during the commissioning stage of the installation programme: *"The previous fixed pipework-based vacuum equipment we'd been installing just wasn't sufficiently powerful enough to do the job required. When you're the world's leading manufacturer of asphalt plant, it's critical that the companies you recommend to your own customers to supply equipment alongside your own are of the same standard in terms of technical expertise and ability to deliver reliable solutions that keep working day and day out."*

"Gotland demonstrated to our complete satisfaction that their equipment was the solution we were looking for. The BagVAC has more than adequate power and does everything our customers require in terms of safe and efficient waste removal. Gotland is a very good team to work with, and listened to suggestions when we made them, eg. about zinc plating the pipework. From my perspective, Benninghoven are very pleased with Gotland, and now regard the company as a preferred supplier and partner."

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www.hub-4.com/directory/354

BG Europa offer hot- mix storage-systems from FMA Ullrich

FMA Ullrich has been building hot-mix storage-systems for Bituminous Road Construction for over 50 years. During this period, they have produced over 1800 Ullrich Silos for the European, Middle Eastern, Asian and African markets. BG Europa (UK) Ltd have been the sole UK agents for FMA Ullrich since 2001 during which time they have supplied and installed silos as turnkey projects for national and independent producers. Many customers repeating orders for sites throughout the UK so capitalising on the increased production efficiency and improvements to customer service that hot storage can bring.

The range of stationary hot-mix storage systems allow customers to store asphalt either to expediently fulfill orders, temporarily store material when weather conditions prevent paving or to provide collect trade with rapid turn around. For major road projects considerable savings are made when the required number of vehicles is reduced by minimising truck waiting time.

Modern FMA skip systems are engineered to provide safe and reliable operation in line with advances in technology, in addition to traditional safety systems such as slack rope alarm; new systems feature innovations such as skip door position detection. Automatic skip-systems feature frequency controlled gear motors giving precise control of skip speed and positioning. This total control of the skip allows it to be smoothly accelerated along the track and then slowed as it approaches the required station, thus greatly reducing stresses on the winch and rope system. To promote operating efficiency the control system can monitor the mixing plant batching rate. Reducing skip transit rate to that which ensures the skip returns to the mixer just in time for the next batch, minimizes energy consumption.

The installation of a new skip winch system on existing storage facilities either with or without additional storage capacity can bring significant improvement in batch plant production capacity. Often batch plant output is dictated by the time taken for the skip to return to the mixer. Frequency control allows the skip to be accelerated to greater speeds and cycle times to be cut. Improvements in the order of 10% to plant production make expedient financial payback possible.

Hot mix storage silos are available in either square or round construction in a range of designs:

- Ullrich T systems are traditional inline silos designed to reduce transport and installation costs. Square bin sections are in container design and are insulated and clad at the factory for rapid site installation. T sections can also be conveniently added to existing storage systems to enhance hot storage capacity.
- The S systems include the S II square silos offering customers the opportunity to install hot storage in locations unsuitable for the traditional inline storage design. In many instances the additional flexibility of four bins can be installed in areas where only two bins were considered possible. The S II Square silo occupies an area of only 5m x 5.2m and offers total capacities of 160, 200, 260 and 320 tonnes, although other sizes can be specified. The four S bins are almost equal in size allowing maximum production flexibility, for example an S200 II features two bins at 47 ton and two bins at 53 ton capacities. Additionally the four bins discharge to a single truckway which can either be in line with, or perpendicular to the skip track. This together with the option to slightly skew the silo structure in relation to the track, allows the silo to be sited in compliance with the most challenging vehicle movement patterns.
- The H systems are a horizontal design offering maximum flexibility for large storage installations as all of the bins are of the same capacity. The bins are installed within a support structure in pairs for rapid site erection and loadcell loading flexibility. The XY horizontal skip on the silo top is supplied by the inclined skip in turn fed from the asphalt plant. The design of the horizontal skip allows it to move across the silos in the X and Y axis to accurately discharge to any bin before returning to station in time for the return of the inclined skip.

Automatic load out systems can either feature loadcell, transducer or weighbridge weighing providing accurately controlled and rapid vehicle loading. Multi position silo discharge doors allow small collect vehicles to be loaded whilst also ensuring materials with poor flow characteristics such as hot rolled asphalt can be reliably discharged. Loading accuracy for loadcell mounted silos are typically within 100kg of target weight and twenty ton vehicle loads can be discharged within 30 seconds.

A site survey by BG Europa will determine which of the FMA Ullrich range of storage silos will most meet the requirements of the customer. Following detailed drawing the outline of the silo can be marked out on site to allow the customer to manoeuvre vehicles and fine tune the layout. Once the silo is fabricated by FMA Ullrich it is installed by BGE with minimal disruption to plant operation. Final commissioning is completed by BGE in conjunction with an FMA electrical engineer who tests the modem link and calibrates the loading system. Once operational the hot storage system is covered by a two year warranty and spare parts are stocked both in the UK and Germany for same day despatch. For further information view http://www.fma-ullrich.de/

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ABB drives cut £25,000 off energy costs for asphalt plant

Over £25,000 of energy costs per year are being saved by an asphalt production plant following the fitting of ABB variable speed drives.

Express Asphalt, a subsidiary of Aggregate Industries, produces 40,000 tonnes of asphalt a year at its depot in Darwen, near Blackburn, Lancashire, mainly for local authorities and utility contractors.

The asphalt production process involves a burner supplying heat to an aggregate dryer in the form of a rotating drum. The dryer dries the aggregate at a temperature of 150 degrees centigrade, a process that creates steam and dust. These are extracted by an exhaust fan, with the dust captured in filter bags for reuse.

Because the 90 kW fan was run at full speed with its output damped, it was wasting a lot of energy. Rick Harbour, works manager with Express Asphalt says: *"The dryer exhaust fan effectively creates a pressure to draw the steam and dust out, but because the motor was running at 50 Hz constantly, it was doing too much work. This was the largest energy user in the process and we wanted to find a way of making it work as efficiently as possible."*

The company asked Rick Hinde of Invertech Solutions to look at ways of controlling the exhaust fan with a variable speed drive. Steve Smith of Beta Power supplied a 110 kW ABB standard drive for the fan. *"The fan had its damper placed in the fully open position and the dryer pressure was then controlled via a pressure transmitter feeding a signal back to the ABB drive",* Hinde explained.

Invertech Solutions went on to install a 30 KW ABB drive to the dryer. *"We experimented with adjusting the speed of the drive to obtain the optimum drying. The burner uses kerosene and we found that running the drive at 55 Hz gives the optimum drum rotation speed for drying. This meant we used half a litre per tonne less of kerosene than before, saving Express Asphalt £8,000 per annum in burner fuel costs. When they are not drying aggregate, the drive ramps right down to a low speed."*

This led to savings of £500 a month in the cost of electricity to run the exhaust fan, cutting energy use from 20 kW per tonne of asphalt produced to between 4 and 5 kW. Payback time was less than 12 months.

Together with other ABB variable speed drives on the bitumen pump, the rotating dryer, the hot stone elevator, the mixer and the batch elevator, as well as other energy saving components such as timers, the plant is saving a total of £1,500 a month on its electrical energy costs. Together with the reduction in burner costs of over £600 a month, this is a total energy cost reduction of around £2,100 a month, or £25,200 a year.

Other benefits include a 5 dB reduction in noise in the asphalt drying area, as well as reduced wear and tear. *"We found that previously we were getting a lot of breakdowns because the dryer fan was working so hard all the time. This was losing us up to 20 production days a year, but since the installation of the ABB drive, we have had no more than six lost days,"* says Harbour.

He adds: *"We have been very pleased with the way the project has gone and it has lead to us being shortlisted for the Carbon Management section of the Lancashire Business Environment Awards. The project is also being replicated at other sites throughout the group, so we should see further savings company wide."*

ABB (www.abb.com) is a leader in power and automation technologies that enable utility and industry customers to improve their performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 117,000 people.

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HAZEMAG boasts world's largest C&DW recycling plant

Van Bentum Recycling Centrale BV, a leading name in the recycling of construction and demolition waste, employs one of the world's largest impact crushers at its 36-hectare processing site located within the port of Rotterdam in the Netherlands.

Three main activities take place on the site: a crushing plant for producing mineral granulates, an asphalt plant for producing hot asphalt for road construction, and a thermal treatment unit for cleaning tar asphalt.

At the site, HAZEMAG, who have vast experience in the design and manufacture of large scale processing plants for C&DW recycling, installed a complete crushing plant capable of throughputs up to 1,000 tonnes per hour. The plant handles concrete (with or without re-bars), building rubble and asphalt paving, and produces a product of 80% minus 45mm in a single pass from feed material of up to 1.5 metres edge length.

At the heart of the plant is the world's largest impact crusher - a HAZEMAG AP-PH 2530 with a GSK-type rotor - 2.5 metres in diameter, 3 metres in width, and driven by an 800kW slip ring motor. The crusher is fed by two HAZEMAG apron conveyors, the first of which extracts the raw material from the storage hopper, with the second faster-running conveyor opening up the material flow. This provides smooth and uniform feeding of an eccentric screen, which separates the fines fraction from the material flow prior to its entry into the impactor. The crushed material is conveyed from the impactor by two vibro-chutes installed in line. At this point in the operation there is a magnetic separator for the removal of ferrous metal inclusions.

Thanks to the size and rugged construction of the HAZEMAG impactor, extremely low wear rate figures are achieved, resulting in minimum downtime for maintenance and maintenance wear parts replacement. Moreover, a number of maintenance aids are provided to minimise the time and effort expended on such operations. After further processing, the extremely high-quality product is supplied in bulk by BRC for use as secondary building material, and to the asphalt and concrete industry where it is employed again for the production of new asphalt and concrete.

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Laying roads with a lighter footprint

Road builders around the world face ever tighter rules on energy use and CO2 emissions. Some national and local governments are also encouraging them to use more recycled asphalt. Now one company has adapted a Shell energy-saving process to produce a road-surfacing material that will better meet these demands.

Millions of kilometres of asphalt-paved roads provide transport routes across the globe. Construction firms lay more every day. They heat bitumen - the residue from crude-oil refining - and mix it with hot sand and gravel to make new asphalt. Often, they throw old asphalt into the hot mix. The very high temperature needed to make these mixtures consumes a lot of energy, resulting in high CO2 emissions. ▶

Dutch construction firm Heijmans has been using a Shell process to make asphalt at lower temperatures than conventional asphalt - using less energy and reducing CO2 emissions. And now Heijmans and Shell have patented a way to incorporate a high percentage of old asphalt into it.

"Our new product contains up to 60% old asphalt, more than the traditional approach," says Gerbert van Bochove, innovation manager at Heijmans. *"And we prepare it about 50ºC cooler than conventional asphalt."*

Keeping cool

The key to the breakthrough lay in the composition of a soft type of bitumen that the Shell WAM (warm asphalt mix) process uses to coat the sand and gravel. *"The soft bitumen chemically breaks down the recycled asphalt without the need for high temperatures,"* says Gerbert. *"So it allows us to recycle asphalt at lower temperatures."*

To give the resulting road surface the necessary performance qualities, a harder bitumen is also added to the asphalt mixture during its preparation. The harder bitumen mixes in easily at the lower temperature, because it is frothed up with water before it is added.

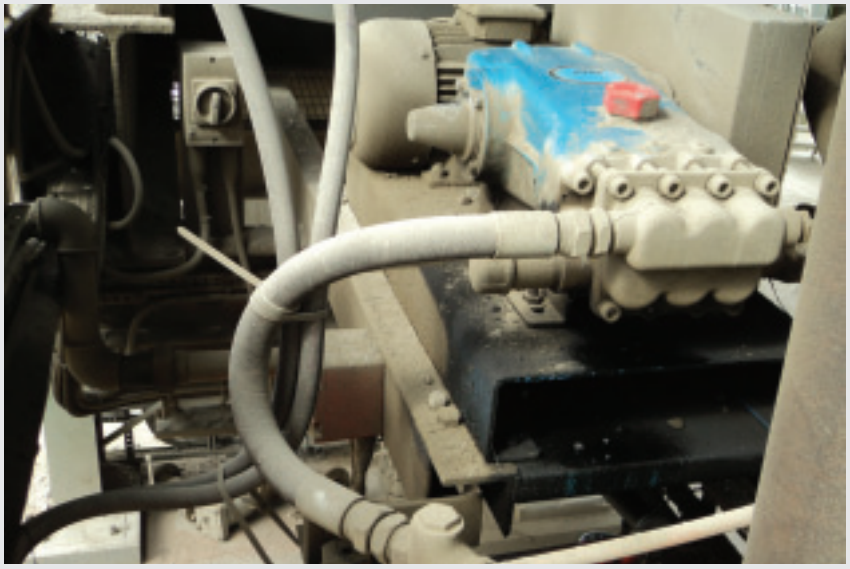
Mixing it up

Heijmans worked with Shell for around a year to adjust the bitumen ingredients to make the Shell WAM foam process work with recycled asphalt.

The final product, Greenway LE asphalt, was recently laid on a test road along a railway line. Heijmans has now brought the product to the Dutch market, and Shell hopes to license the manufacturing process in other countries in the future.

www.hub-4.com/directory/771

Asphalt and Roadstone Production - Pumping Processed Fuel Oil in asphalt burners with Cat Pumps



The burning of waste oils been a common practise within many industry sectors over many years and the production of asphalt, which requires crushed stone to be heated prior to receiving its filler and binder, is one example. However, using Processed Fuel Oil (PFO) in asphalt burners has been a contentious issue for some considerable time as there have been prolonged arguments as to whether this constitutes illegal incineration of waste under uncontrolled conditions.

With the recent introduction by WRAP (Waste and Resources Action Programme) and the Environment Agency of a Quality Protocol, which sets out 'end of waste' criteria for the production and use of PFO from waste lubricating oils, the position for users of asphalt burners may become much clearer. If these criteria are met, PFO will normally be regarded as having been fully recovered and to have ceased to be waste.

However, it still leaves the problem that many types of PFO are difficult to pump. Some are highly viscous and need to be heated to high temperatures so that they can be pumped through the burner jets, so energy costs increase. Where heavy fuel oils are used there can be a problem with abrasive suspended solids as these may cause major damage to the pump, leading either to frequent pump maintenance or replacement. Kerosene, which is becoming far more widely used, has poor lubricity properties which will lead to premature component wear in most types of pumps. So the choice of fuel also impacts on the selection of the burner jet fuel feed pump to maximise plant efficiency and productivity.

The production of asphalt requires the crushed graded rock or aggregate to be heated before it is given its bitumen coating. The role of the asphalt burner pump is to provide a constant supply of fuel into the burner injection system that heats the aggregate prior to it entering the mixer drum. Generally two types of burner are used:

Operating conditions are usually harsh with the pumps often expected to run continuously for up to 10 hours and one company that sees its fair share of worn and damaged burner feed pumps is Asphalt Burner Services. Providers of burner equipment servicing, plant upgrades and replacement components, the company is eminently qualified to comment on types of pump most suited to the duty. They will commonly find pumps that require constant maintenance or regular replacement, suggesting that many of these types of pumps are not suited to the combination of arduous working conditions and problematic fuels.

"On some of the heavier fuel oils the typical working life of a worm gear pump will be around six months," says Ian Lewis, Senior Engineer Asphalt Burner Services," *and in our experience replacing this type of pump every three months is not unusual. Where possible we will recommend Cat Pumps triplex positive displacement pumps as they are reliable, require less maintenance and offer a far longer working life. We have experience of this type of pump running for up to six times longer than a worm gear pump. The Cat Pump will be a higher initial investment, but this is recouped through lower maintenance costs and the extended working life."*

Tarmac also uses the Cat Pumps for pumping PFO into its Benninghoven asphalt plant burners. *"Although they are more expensive to maintain they have proven to be the only viable option we could find for this duty,"* comments Derrick Holmes. *"They are robust and give us good reliable operation providing we service and maintain them properly."*

The most commonly used Cat Pumps for asphalt burners are the Models 2530 and the 3535 plunger pumps, which provide pressures up to 50 bar. The essential reason why these pumps are perfectly suited to this arduous duty is that, unlike most rotary positive displacement pumps, they have no relative movement between metal parts within the pump chamber. Components such as a worm gear, vane or screw in other pumps quickly become abraded by suspended solids in the PFO, or suffer rapid wear when pumping low lubricity fuels. Then the increased internal clearances between components allows excessive internal slippage leading to loss of efficiency and output.

Conversely, the only relative-moving parts in the fluid head of a Cat Pumps triplex PD pump are the hard ceramic plungers which run in specifically designed seals that can tolerate low lubricity fluids. When these eventually become worn they can be readily and inexpensively replaced, restoring the pump to full efficiency. Furthermore, the performance of triplex positive displacement pumps is unaffected by specific gravity or viscosity of the pumphead fluid making them ideally suited to kerosene.

Finally, unlike roto-dynamic pumps which use inertia to impart the flow, Cat Pumps reciprocating positive displacement pumps will always deliver a constant predictable flow rate irrespective of back pressure from the burner. On the inlet stroke, the pumps takes in a fixed volume of liquid and physically moves it through and out of the pump with virtually no losses or inefficiencies.

In summary, the advantages of reciprocating PDPs lie in their high efficiency, their ability to generate high pressure and to produce constant volume irrespective of the pressure. Because of that, where an application demands controlled variable flow, they are eminently suited to using variable speed drives as the output is a linear function of the rpm, so removing the requirement for a complex algorithm to run the variable speed drive. With greater emphasis now being placed on energy efficiency, using a triplex pump with a variable speed 'inverter' VSD drive can provide very high overall efficiencies across a wide range of flow rates and pressures. This pump type will always operate at greater than 50% and can be as high as 90% depending on the pump model selected and how it has been installed.

With the increase in use of kerosene and similar lighter products which have poor lubricity properties, coupled with demands to reduce energy and production costs, more operators of asphalt plant are returning to PDPs, and in particular from Cat Pumps with this company's long experience and excellent reputation in the burner fuel feed market.

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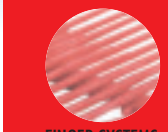
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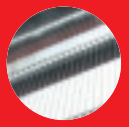
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