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**Issue 12**

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

# Bespoke Quarrying & Recycling Solutions



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*Sotres 80 TPH Single Grade Sand Treatment Plant, North Yorkshire*

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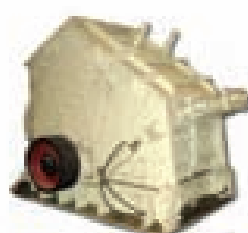
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## Aggregates help the UK to get a grip

**Snow in late December made for a memorably festive Christmas and when it returned early in January, many people enjoyed the chance to build a snowman or extend their Christmas break.** More seriously though, as both these falls stayed put for an unusually lengthy period the pleasant aspects of snow in winter soon melted into strife, disruption and headaches as the country slid about trying to find its footing as well as more salt. Dwindling supplies of salt and grit became the most discussed issue in the country and not just among people struggling to get to work: questions were raised in parliament as the issue became a political hot potato as the question on the general public's lips grew into a common rumble of discontent: *'How can the country in the 21st century not be able to keep roads clear when we get a bit of snow?'*

There are of course arguments about the supply, storage and distribution of salt and these will no doubt continue to be a matter of debate - probably after we get the next snowfall. However readers will be pleased to note how the aggregates industry came to the country's rescue in its hour of need as councils were urged to use aggregates.

According to the British Aggregates Association, quarries across the UK supplied fine aggregates to local authorities to treat iced up roads and pavements. Thousands of tonnes were supplied and some airports also made use of the material.

The hero of the hour is actually something of a comeback kid as quarry grit was the traditional method of dealing with snow and ice before the use of salt became commonplace. Although it does not melt ice in the same way as

salt, it is ideal for providing grip on slippery surfaces.

The quarry grit was used as temperatures began to rise yet hundreds of miles of roads and pavements still remained in a treacherous condition. British Aggregates Association director Robert Durward urged at the time: *"Spreading quarry grit will prevent accidents and reduce pressure on the remaining stocks of salt."*

Lack of vehicles need not be a problem as it is possible to use farm machinery to spread the grit meaning that many more roads and pavements can be treated than would otherwise be possible. Furthermore, quarry grit has no adverse effect on the environment and can be recycled once the ice and snow have melted.

Information on using aggregates, salt and grit for snow and ice reduction on roads is given on Tarmac's web site. It points out that according to County Surveyors' Society guidelines, minor roads should be spread with grit, rather than salt, to provide traction and help to break up frozen surfaces in areas where snow and ice has compacted. To help local authorities cope with shortages of salt, the guidelines recommend that grit, such as abrasive aggregate or sharp sand, should be used instead of salt in certain circumstances. They add that grit can be mixed with salt to a ratio of up to 50:50 to treat snow that has already settled on a carriageway.

Hopefully readers of Hub did not get trapped for too long in the snow. If we get more this winter then fine aggregates will no doubt be coming to the rescue again.

*Happy New Year*

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# Finedoor Next 25 years ...

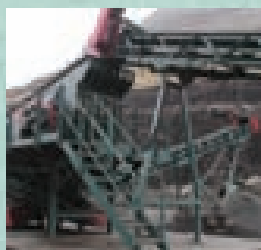
*Finedoor Ritescreen and Structure - 8 x 2.4 m 3 Deck Aggregate Screen, United Arab Emirates*



Finedoor is a dynamic group of professionals with one aim - 'to provide excellent bespoke quarry and recycling solutions to our customers globally'. We provide solutions which encompass our own designed and built equipment plus that of specialist equipment manufacturers.

Our customers include the major UK and Middle East quarrying and civil engineering groups as well as a growing number of independent companies. Together with an expanding overseas customer base this has ensured sustainability for Finedoor in an ever more volatile worldwide market.

Whether your requirement is for a bespoke individual unit to replace existing equipment or the design, detail and supply of all necessary



*Finedoor Ritescreen, Structure and Conveyors, Faroe Islands*

components for a new or upgraded plant, Finedoor is able to offer a cost effective solution.

We know that our customers work with us because of our ability to adapt to their systems, solve their problems and provide an excellent service in a professional manner.

Since James Blanchard joined Finedoor three years ago his expertise, gained in the oil and gas supply industry, has been used to further expand Finedoor's product range. Thus enabling complete mineral processing solutions in partnership with Sotres, one of Europe's well established sand processing and effluent treatment companies.

Finedoor's wide knowledge of the source and supply of new/used equipment and spare parts for quarrying purposes has developed to keep pace with our customers' requirements.

Quarry consumables and machinery can be shipped by road, air or sea within the United Kingdom and Worldwide as single consignments or as full container loads to suit customers' requirements.



*Finedoor Ritescreen and Structure - 4.2 x 1.8m 2 Deck Heavy Duty Scalping Screen, United Arab Emirates*



## Bespoke Quarry &

## Quarry and Recycling Site Services

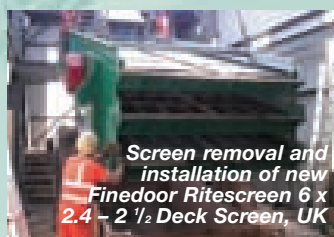
Due to increasing demand Finedoor is now offering a wide range of site services, including:

- Screen installation and commissioning
- Plant installation and commissioning
- Service and Inspection reporting
- Crusher repairs
- Hopper and chute linings in rubber and steel
- Bespoke engineering solutions
- Lifting Operations - Contract Lift

Finedoor has extensive industry experience and holds accreditation from SAFE contractor, a programme which recognises very high standards of health and safety practise amongst UK contractors.

The company's application for SAFE contractor accreditation was driven by the need for a uniform standard across the business.

- All Engineers hold the relevant documentation
- Service packages are available and cover a broad range of key components



## Finedoor's range of Quarry Consumables includes:

- Crusher Spares including wear parts and bearings
- Screen Spares including screen media and bearings
- Polyurethane and Rubber Screen Media
- Wash Barrel Linings & Trommels
- Mill Linings
- Dust Encapsulation and Dust Suppression
- Abrasion Resistant Rubber Sheet
- Steel Backed Rubber Elements & Tiles
- Vibrating Motors etc

## As part of the product range expansion Finedoor has recently been appointed UK dealer for SOTRES Sand Plants and ORTNER Dewaterers.



*Sotres Clarification System and Compact Sand Plant, Ireland*

## Sotres Sand Plants

Sotres has been a specialist in washing and preparing sands in quarries and pits for more than 25 years, together with the subsequent waste water recycling and filter pressing.

SOTRES designs and manufactures sand washing units based on samples analysed in their laboratory or on the results of analyses supplied by the client.

These elements mean that they can offer units designed to meet quality requirements (particle size, curve, cleanliness).

The sand processing units are composed of modular elements which means that we can produce standard assemblies for the simplest installations or adapt the sand processing units to suit each site's requirements and the matter to be treated.



*Finedoor Ortner 3000 quarry dust sand to remove minus 63µm, Scotland*

## THE ORTNER™

The ORTNER is a well proven concept for dewatering, removing fines, classifying and rinsing sand and other materials up to 60mm. It has the performance capabilities and advantages unmatched by other machinery. It is currently used by the majority of the major aggregate producers in the USA.

The ORTNER can wash fine and course materials providing the flexibility to produce many varied products with one machine. This is ideal for washing surface dressing, rail ballast etc. Dry material may be fed to the ORTNER to remove excess fines for example dust in a dry stone quarry, or rinse course materials by adding small amounts of water.

When fed a wet slurry, as from a density separator or a hydrocyclone, the ORTNER may be used to dewater the product. It may also be used to remove excess fines from the slurry or it may classify the slurry.

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# Recycling Solutions

## Award winning wearparts

Steelpro has recently been awarded the prestigious entry into the Hardox Wearparts Network. One of only five companies in the UK, the award is achieved for continued excellence in the manufacture of wearparts made from Hardox, a global brand of SSAB Sweden.

Steelpro is a preferred supplier to many Recycling and Mining companies in the UK and overseas, specialising in heavy parts from their extensive inventory. Steelpro can offer wearparts from stock up to 150 mm thick and with current development work at SSAB, are intending to increase the range of heavier gauges in the near future.



The photograph shows Colin Orchard of Steelpro being presented with the Hardox Wearparts plaque by Harald Pedersen, Area Sales Manager ANW, and John Gregory, Regional Sales Manager UK, from SSAB Sweden.

## New recycling equipment manufacturer sets sights on global market

Iona Waste Systems specialises in the design and manufacture of a diversified range of products, aimed at the waste recycling sector. With environmental and economic issues at the top of the agenda in the industrial sector the company believes these products have come onto the market at the right time, helping businesses reduce landfill costs and turn waste into high grade, saleable products.

Currently Iona offers a range of equipment suitable for the Construction and Demolition (C&D) and/or Construction and Industrial (C&I) waste industries. The range includes trommels, air separation systems, sorting stations, stretch-deck screens and associated auxiliaries. To complement this offering, Iona has partnered with two European companies who it views as technological experts in the waste field, and will be launching part of the new range at the Hillhead Show later this year.

As well as targeting UK and Irish markets, Iona is keen to exploit the huge export market potential where legislation dictates the importance of recycling C&D and C&I waste to reduce landfill taxes. To support their export potential the company is finalising new dealers in USA, France, Germany and Australia.

The team at Iona includes Paddy McEnhill, operations director, who has over 20 years manufacturing experience with Extec Crushing and Screening and Declan McNally, technical sales director, who has 12 years experience in the waste handling sector. Hubert Watson, following on from his export success with Fintec Crushing and Screening, leads the team.

Based in Killyman, Co. Tyrone the company is in good company in the 'hub' of engineering and manufacturing in Northern Ireland. Declan McNally talked to Hub about the waste recycling sector.

### HUB: Why is it important to invest in waste recycling equipment?

*DMN: Environmental Reasons - to comply with legislative and ethical drivers by recycling waste materials and reducing the amount of waste going to landfill. There is reduced landfill tax for processors with the right equipment. This requires significant investment for significant return so good market research and advice from waste specific experienced professionals is recommended.*

*In our experience to maximise performance the equipment needs to be designed specifically for waste industry (as Iona does) rather than quarrying /*



*construction application applied to waste, which is often the case.*

### HUB: What in your view are the main issues affecting sector?

*DMN: Securing necessary waste management licences then finding the right products with sustainable prices and getting buyers for the waste products. It is important to have systems that can process a range of waste materials and produce various end products. It is also important to maximise what the facility can process and what can be sold (resulting in income), and also what can be diverted from landfill (resulting in saving). Certain waste products are more difficult to recycle efficiently and as a result can have high labour costs. More technical solutions are needed in these cases.*

*Processors also need to adapt to market trends. For example, three to four years ago C&D waste was predominant yet the downturn in construction has led to increased processing of the C&I type waste. Processors therefore need to be adaptable and knowledgeable, getting the correct advice and equipment package that can facilitate changing market needs and trends.*

### HUB: What are the typical benefits of waste processing equipment?

*DMN: Improved environment and compliance with environmental legislation sit alongside the economic benefits delivered by equipment. The right machinery will maximise production and throughput, enabling income via production of sought after recycled material that can be re-used or sold on, thus saving on landfill taxes by reducing the amount of waste being sent to landfill.*

### HUB: What are customers looking for in terms of supplier and equipment?

*DMN: Customers are looking for the right technical advice from Companies with experience of a range of waste processing. They want a supplier that can provide a good waste processing consultancy in line with their needs, market and legislative drivers, as well as future opportunities or plans for their business. Alongside this, customer's want equipment that has reliability and longevity, is value for money and cost effective and does the right job!*



**Quarry Manufacturing & Supplies Ltd (QMS) are the industry leaders in the replacement of wear parts and maintenance of all major OEM crushing equipment. All servicing can be carried out on-site or at our own extensive workshop facilities, which are based in Coalville Leicestershire. We operate our own 32T eight wheeler flatbed lorry complete with PALFINDER PK42502 crane for on-site maintenance; this gives QMS customers a single efficient solution to cover all aspect of the job including the delivery of parts.**

All QMS's service and maintenance work is carried out in-house by our own highly trained service engineers; we do not employ contractors. All QMS engineers are fully qualified and carry all documentation legally required for working in quarry sites, this includes SPA safety passports, and appointed person certificates to BS7121 enabling them to carry out on-site bespoke lift



Pegson, Finlay, Symons and many others. All QMS parts are manufactured to ISO9001 standards, reinforcing our high quality, and are fully interchangeable with the OEM equivalents. All QMS parts are guaranteed. Our manganese and chrome specification are set to offer the best possible wear life at competitive prices, and coupled with our extensive stock QMS are able to support the global quarry and mining industry with cost efficient, time saving components.

QMS are also the agent for MICOR crusher backing, largely regarded as one of the world's leading brands of its type. We carry large amounts of stock of crusher backing offering discounts for large orders.

We currently support many of the largest names in the quarrying industry. These include Aggregate Industries, Cemex, Hanson Aggregates, Lafarge & Tarmac as well as the smaller demolition & contract crushing companies located around the world. QMS are approved suppliers for these major quarrying companies.



plans. We pride ourselves on our impeccable on-site health & safety record and strive to update all personnel training on a regular basis backed by our extensive technical expertise in the crushing industry.

Our extensive workshop and machine shop facilities enable QMS to offer a fully supported repair and refurbishment contract, this include the repair of components to the complete overhaul of machines when required. We are the regular choice for the major repairs to both cone and jaw crushers covering both the mobile and static plant market.

QMS manufacture and supply an extensive range of high quality crusher parts which are shipped worldwide on a daily basis. We offer replacement wear parts and spare parts for many of the world's most popular crushers, including; Metso, Sandvik, Extec, Fintec,



## Case unveils new customer centre

Case has unveiled a new demonstration and product testing facility on the outskirts of Paris in France. The Case customer centre is the result of a £3m investment by the manufacturer and is designed to provide facilities for customers to see and operate machines in a genuine working environment.

*"The idea is to be the first in the industry to offer not just digging facilities but to replicate the conditions and working patterns that will be found on a job site, so that machines are not simply driven but are used in real-life working situations,"* said Tony Walton, Case customer centre general manager.

The 6.5 hectare customer centre is designed around six zones, each of which has features replicating specific job sites for different types of machines.

*"There's a zone for small machines - mini-excavators, skid steers and backhoes, and there's one for machinery used in re-handling such as material*



*handlers or telehandlers that features everything from logs to pipes and scrap metal,"* said Walton. Other zones include replica job sites for medium and large excavators, dump trucks, a road-building zone and a ditch and canal area for those using long-reach machines. *"The site even has access to its own quarry,"* Walton added.

Along with these demonstration zones, the new customer centre also features an 80 seat all-weather auditorium from which the machines can be viewed, several classroom areas, canteen facilities and a Case museum. Technical training facilities for service engineers will also be available on the same site.

The customer centre will provide a central hub for the demonstration and operator familiarisation of all the company's products. It will also be home to the Case driving school that will be open to any operator wanting to make sure they get the best out of Case machines.

The new customer centre is located in Monthyon, to the north-west of Paris, close to Charles de Gaulle airport and Eurostar station. The company estimates the centre will receive more than 3,000 visitors each year.



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## Planning System Will Slow Economic Recovery Says MPA

**Failures in the current planning system are likely to inhibit the recovery of the development and construction industry and the mineral products sector upon which they rely, says The Mineral Products Association (MPA).**

The 'plan led' system in England is no longer fit for purpose and has failed to deliver the certainty that was promised. In the minerals sector less than 20 of the new-style minerals development plan documents have been completed out of an estimated 200 plus that will be needed to give full coverage.

Simon van der Byl, executive director of MPA, said: *"What is needed is a system that ensures all concerns are dealt with proportionately, fairly and speedily. With so much cumulative under-build in housing and so much of our infrastructure still in need of repair or upgrading, let alone the need for new energy capacity and flood protection, something has to change and fast. The recovery will only be as good as our planning system allows it to be."*

*A knock on consequence is that the annual replenishment rate for aggregates - materials essential to construction and maintenance - are typically only 60%, raising the prospects of localised supply shortfalls as construction activity picks up from mid 2010."*

With the government's imperative to deliver new housing and mitigate climate change, it is now absolutely vital that there are no unreasonable barriers to construction and that the planning system is responsive to meet the future demands of the economy.

MPA is also concerned about opposition plans to abolish regional planning and introduce more 'local' control over development, which it fears will encourage 'parochialism' and only make matters worse. It believes that removing regional considerations will simply give local authorities more freedom to turn down proposals without having to take proper account of the consequences nationally or regionally.

The organisation is calling for recognition of the hold-ups and the need to formulate an improvement plan.

This could mean interim measures and guidance will be required to free up the current system from too much iterative appraisal process and hard targets issued to planning authorities and the planning inspectorate to deliver

shorter, simpler plans by an agreed target date to support the economic recovery and not inhibit it.

*"It's bad enough trying to keep construction buoyant in this recession,"* said Nigel Jackson, chief executive of MPA, speaking on behalf of the mineral products industry, *"Now we're having to deal with a development plan system which, far from improving things, is proving to be a burden for everyone involved with it and acting as drag on the recovery. The lack of certainty created by the current system coupled with the cost can act as a discouragement to developers to submit applications particularly in the current economic environment. By the time the recovery takes hold an in built inertia will inevitably slow things down."*

*We've given the changes a chance to bed in but they're just not working. In fact with all the legal challenges and general nervousness about the system, there's no doubt that it's getting worse."*



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## Mining and Construction Solutions

Metso is the leading global supplier of technology and services for the mining and construction industries. Our customers work in quarrying, aggregates production, construction, civil engineering, mining and minerals processing.

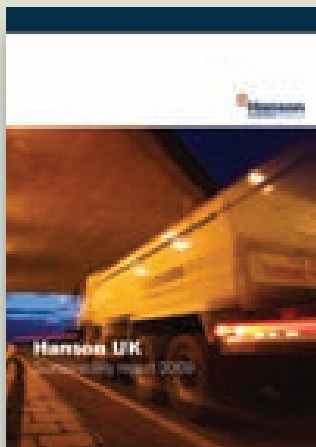
Our solutions and know-how cover everything from individual machines to complete Systems and turnkey installations. Customers can rely on the same dedication from Metso people in areas such as maintenance, supervision, process optimization, testing and inspections.

To take advantage of what we can offer, please contact us

Metso UK & Ireland: +44 (0) 1788 532100 [minerals.info.uk@metso.com](mailto:minerals.info.uk@metso.com) <http://www.metsominerals.com>



## The UK's lowest CO2 cement producer?



**Many of the construction industry's key figures were among the VIP guests to be given an exclusive tour of Hanson's new £50 million brick factory at Measham in Leicestershire on 30 September.**

They included Construction Products Association chief executive Michael Ankers, Keith Wright, production director at Travis Perkins and Steve Ashmore, managing director of the Wolseley Group.

In addition, Hanson's customers were invited to see first hand how the most sustainable bricks of their kind are produced.

Among them was Nigel Dodds, group buyer at Persimmon Homes, who said: *"Hanson's new factory is extremely impressive. In addition to its sustainability credentials it offers bricks with a consistent colour, dimension tolerance and quality, which is of vital importance for us and our customers."*

The Measham factory is the largest 'soft-mud' brick plant in Europe and has sustainability and quality at its core. It stands on a brownfield site and has been developed to combine locally sourced recycled raw materials with low energy, low waste processes to make bricks with the lowest embodied CO2 available. With the capacity to produce 30,000 bricks an hour, the fully mechanised factory can operate with just 28 staff.

The factory now produces eight different bricks – four pressed and four thrown, in red and buff plain and multi options – with a range of 18 specials due to start production next month.

The open day was hosted by Patrick O'Shea, Hanson UK chief executive officer, and David Szymanski, Hanson Building Products managing director. Dr Bernd Scheifele, chairman of the managing board of Hanson's parent company, HeidelbergCement AG, unveiled a plaque to mark the factory's official opening.

*"The Measham factory has the capacity to produce the same volume of bricks as five of our previous factories and this investment in the current economic downturn will give us a competitive edge when the market recovers,"* said David Szymanski.

## JEC Vac Solutions Ltd secure new Sole Agency Agreement with Ecogam

**JEC Vac Solutions Ltd recently secured a Sole Agency Agreement with Ecogam to supply Heavy Duty Industrial Vacuum Cleaning Equipment for the UK and Ireland markets.**

Ecogam is a leading company specialized in the design, manufacturing and sales of heavy duty industrial vacuum equipment for dry applications. Started in 2001, Ecogam has already built an installed base of more than 200 vacuum units -including centralized systems, portable and towable equipment, as well as truck mounted vacuum solutions- operating in a wide variety of industry sectors: cement, mines and quarries, foundries, power, plaster, lime, concrete, ceramics, bricks, glass, fertilizers, human and animal foodstuff, etc...

In a recent project, Ecogam supplied a TOWABLE UNIT (AR-I) to a large potash mine owned by one of the world's largest producers of fertilizers. The unit is servicing a fixed pipe network along a conveyor belt area where continuous spillages occur. Ecogam equipment removes close to 30 tons/day of material. In addition, thanks to its compact size and easy transport capabilities, the unit is often moved using a forklift or power shovel to clean in other areas outside the factory network, mainly inside elevator pits, boilers, silos, etc. According to the production manager: *"the acquisition of Ecogam equipment has quickly paid off, it has resulted in a reduction in the number of production stops, as well as in the people and time employed for cleaning jobs. Ecogam equipment has also proved to be strong and reliable, supporting the tough environment of the mine with virtually no maintenance"*.



Another company manufacturing Gypsum Powder -part of a well known multinational cement group-decided to purchase an ASPICOMPACT vacuum unit powered with a 22.5 Kw Siemens turbine to replace existing equipment from a well known cleaning brand that was not offering the required performance. Gypsum is a very fine powder which easily obstructs the filtering system when the vacuum unit is not truly designed for heavy duty industrial use. This not only makes the cleaning duties very slow, with frequent stops to clean or replace the filters, but it can also cause the material to pass into the vacuum producer resulting in continuous mechanical failures.

The general manager of the factory points out the main advantages obtained from the Ecogam solution: *"its superior vacuum performance, the reliability of the filtering system and turbine, and the equipment discharge facilities"*. And *"Except the replacement of working hoses and accessories, Ecogam equipment does not really need any regular maintenance operation. We no longer have to replace mechanical parts due to break downs as we were forced to do with our prior vacuum system. This has saved us a lot of time and money"*

John Clarkson, of JEC Vac Solutions Ltd, said: *"Ecogam have a reliable and proven track record in their field and we are excited at the opportunity to promote the Ecogam range. The high quality and dependability of the equipment, combined with our sales, technical support and after-sales service, offers UK and Ireland customers a confident Solution to their Heavy Duty Vacuum requirements"*.



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## Industry leader in health and safety named

**Lafarge Aggregates & Concrete UK was been named industry leader in health and safety at the Mineral Products Association (MPA) Health & Safety Awards, held in London in October.**

The company scooped the industry's top award - the John Crabbe Memorial Trophy, which recognises outstanding excellence in health and safety. The trophy

was presented by Lord Jordan of Bourneville, president of the Royal Society for the Prevention of Accidents (RoSPA), to Lafarge's Regional President Northern & Central Europe Dyfrig James, Managing Director Asphalt & Pave Chris Plant and Head of HSQE Dawn Edwards.

The sea change in the company's health & safety performance began after the death of Barry Williams, an employee of 38 years, who was crushed when a rock face collapsed. Then-managing director Dyfrig James announced he didn't "want to work for a company that kills people" - and steps were taken to change employees' behaviour and attitudes towards health and safety across all sites, including offices.

Six years on, Lafarge has reached a tipping point in its health and safety performance. The company moved from a record high of 47 lost-time incidents (LTIs) in 2003, to just one LTI in 2008. And in 2007, the company set an industry record of 409 days without an LTI.

Head of HSQE Dawn Edwards said: "It's an honour to be recognised by the industry as the best in class. Our Visible Felt Leadership (VFL) programme is a way of life for us and has been instrumental in bringing about companywide improvements in our health and safety performance".

## BAA safety scheme comes good

**The British Aggregates Association (BAA) has welcomed the recent proposals by the Conservative Party to cut the burden of health & safety red tape on industry. Conservative proposals are based on the "Earned Autonomy" schemes in the US which have replaced government regulators by industry audits.**

BAA director, Robert Durward said: "The Conservative plans would fit very well with the recently introduced BAA safe site compliance scheme. The BAA scheme already has the support of the HSE who rate it as one of the most effective they have seen."

The BAA scheme is a professional audit of the site, personnel and working practices. It is carried out by industry experts who report to an independent panel. The first two certificates were awarded at the BAA AGM at Rutland Water in May 2008 and over 20 BAA members will soon have completed the process.

Robert Durward added: "The BAA scheme not only provides evidence of competence, it makes a significant contribution to site safety which is by far the most important consideration. All our members wish to look after their staff and the BAA scheme is proving to be a vital tool for quarry managers whether or not they already hold formal qualifications."

The scheme adapts itself to the particular circumstances of each individual site and more emphasis is given to practical issues than to creating a paper trail. BAA assessors look beyond desk based safety procedures and base their judgement on what is actually happening "at the coal face."



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## 18 excavators for Belgian construction company

Belgian Terex distributor, Terex Kemp, will supply 18 excavators to Groep Verbraeken Construction. Ten TC35, five TC48 compact crawler excavators, and three TW85 compact wheeled excavators will be delivered. The company's sale of Terex excavators follows two prior successful months, which saw them sell more than 55 machines in July and August.

Tom Vendelmans, director of Groep Verbraeken Construction, explained why he chose Terex Kemp and its Terex machines: "These days, competitive pricing is very important to us, but we were also impressed by the honest approach of Kemp and its employees. We have 130 pieces of equipment so spare parts and responsive service are also top of our list of requirements. In this respect, Kemp is the perfect partner for us."



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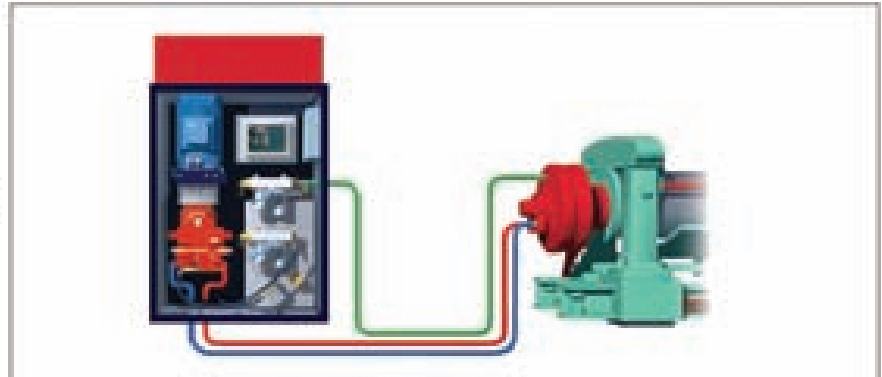


# Tough drives for demanding applications.

## Direct hydraulic drives for bulk materials plant.

Heavy plant requires reliable, efficient, low maintenance drives and there is something very attractive about Hägglunds Compact drives that do away with the need of gearboxes and offer a simple arrangement and extremely effective performance on all types of bulk handling plant.

Hägglunds now manufacture a very wide range of hydraulic motors and customised power units which can be matched exactly to your needs. They provide full torque throughout the speed range so starting up with heavy loads is no problem. You get smooth controlled and responsive start, stop and reversing without having to oversize the standard AC electric motor. They are simple shaft mounted and easy to install without foundations or alignment problems. They provide benefits for



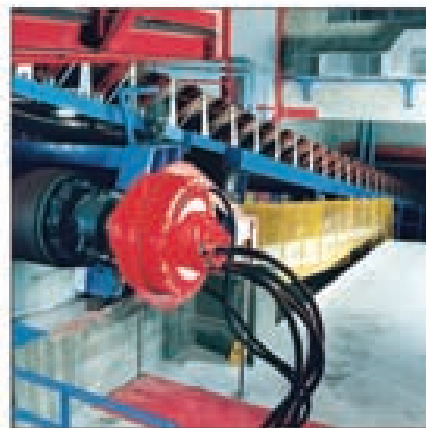
A typical Hägglunds Drive consists of a drive motor selected from the wide range available to give the torque required. A power unit with a variable displacement pump/motor set and necessary tank, filters and instrumentation. A control and monitoring unit and the inter piping. The arrangement is versatile and flexible which enables customisation to suit the exact requirements of the application and environment.

applications like conveyors, feeders, drums, mills, mixers and heavy mobile plant; featuring versatile mounting, through drives and perfect power sharing for one or more motors acting

together. The power unit can be positioned well away from the drive in a convenient place leaving a compact drive with minimal maintenance to do.



Heavy drums can be driven by one or more drives sharing the load, in this case 4 drives. The pressure in the system inherently balances between the drives and a smooth efficient operation is assured. Hägglunds drives are also used on Digesters, Cement Kilns and Sugar Diffusers and Trommels.



This 8000 tonne/hr belt conveyor at LKAB's Luleå plant in the north of Sweden was supplied by Roxon. They were impressed with the smooth speed control and that the shaft mounted motors require so little space and no foundations. Vibrations and noise levels were also lower than normal and it can run fully loaded at low or high speeds as required.



This feeder is driven by a Hägglunds Compact motor type CA100 with variable speed and starting torque of 33kNm, some three times higher than nominal and demonstrates the attractive simple and compact arrangement with the power unit conveniently positioned out of the way. Compact motors are highly efficient and come in over 40 sizes so they can be exactly matched to your needs.



## Talking about bulk

**Brian Mackenzie, the new president of the MHEA provides an introduction to the seminars featured during the Bulk2010 event being held on 13-14 May 2010 at the Hilton Hotel Blackpool.**

Innovation and progress become even more important in times of recession and the MHEA Technical Awareness Seminar bucked the trend in 2009 with a successful event, which we look forward to repeating in 2010.

Once again we are delighted to announce Rema Tip Top Industrial UK as our major sponsor for the event.

This forum offers an unparalleled opportunity to keep abreast of the latest developments in bulk handling worldwide whilst networking with like-minded colleagues and professionals in our broadly based industry.

The seminar will be opened by Jürgen Maier, head of Siemens UK and feature sessions on specialist belt conveyor technology, innovations in ship loading, moving towards mobile plant (the first occasion we have covered this expanding subject), 21st Century Chute and Transfer Point Design, biomass in the power industry and process equipment - storage and handling.

To acknowledge and celebrate the lifetime contribution of our late secretary Dr Harold Wright we have introduced the Dr Harold Wright Memorial Lecture which, this year, will be given by Professor Mike Bradley of the Wolfson Centre.

Our keynote address will be highly topical on Achieving the Energy Savings Necessary to Meet Environmental Targets and we anticipate this being the launch of a long term link with the subject.

Once again we will gather in the bracing sea air of the Blackpool Hilton which has served us so comfortably in the past. Combining the latest technical developments and CPD benefits with a hugely enjoyable networking event and excellent gala dinner, this is a conference not to be missed.

*Bulk 2010's programme of seminars starts on Thursday 13th May 2010 with a Welcome by Brian Mackenzie, president MHEA along with a formal Opening of BULK2010 by Jürgen Maier, head of Siemens UK.*

*The morning continues with sessions on Specialist Belt Conveying Technology and Innovations in Ship Loading and Unloading. After lunch there is a session on Moving towards Mobile Plant, which will be followed by an MHEA address that will provide a summary of initiatives and improvements flowing from its Strategic Review. A session on 21st Century Chute & Transfer Point Design will finish formal proceedings for the day.*

*The next day begins with the Dr Harold Wright Memorial Lecture, followed by a session on Biomass in the Power Industry. Then, Gareth Jones, technical director, Camco will deliver the keynote address on Achieving the Energy Saving necessary to meet Environmental Targets. A session on Process Equipment - Storage & Handling follows and the event will be rounded up before lunch with a summary from Nick Garthwaite, vice president MHEA and chairman of BULK2010 before Brian Mackenzie closes the event.*

*BULK2010 will also feature an exhibition. The Seminar programme allows for 2 hours of extended coffee breaks plus lunchtime contact to allow visitors to talk to exhibitors. A private dinner on the evening of 13 May 2010 offers delegates and speakers alike the opportunity to renew old acquaintances and meet industry colleagues in a relaxed atmosphere - booking forms for the dinner and registration details for BULK2010 are available from MHEA.*



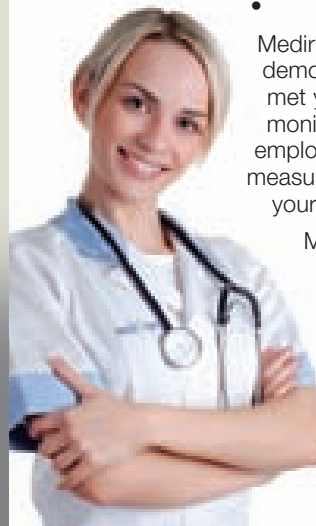
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## Wright Engineering launch Mediright

Wright Engineering has just announced the launch of Mediright. The professional services that the new company will provide include an On-Site Health Screening service that will revolutionise your place of work and the way you view Health and Safety.

By using Professional RGN Nurses who dedicate their time and expertise to each and every one of your employee's Mediright will be an invaluable asset for your company.

- Reduce absenteeism, which in turn will repay any cost many times over.
- Reduce Insurance premiums in the majority of cases.
- Help guard against future litigation.
- Make your work place safer, and reduce accidents.
- Reduce time and resources spent on rehabilitation.
- Promote the Corporate Responsibility of the company.
- Provide in-house access to medical advice and services.
- Send a strong message to your staff, that you care about their wellbeing.



• Help save lives!  
Mediright will allow you to demonstrate how you have met your obligations to monitor the health of your employees as a means to measure the effectiveness of your Control Measures.

Mediright will visit your place of work, to minimise disruption, and project manage the whole operation from start to finish, adding value not cost.

### Influence Drug and Alcohol Testing

With ever more complex issues surrounding substance abuse you will appreciate that an effective Policy, including an effective Drug and Alcohol Screening Programme will help to ensure that you minimize potential problems. The Mediright 'Influence' package is there exactly for that purpose

Our professional Registered General Nurses are trained in the correct protocol and have access to independent external laboratories, to ensure and protect the interests of the individual and the company at all times.

Stewart Wright - Chairman of Wright Engineering, commented, "In May 2009 I used guidance from the HSE to implement Health Screening and Drug and Alcohol testing across the whole of my workforce. I am proud to report that both are now valued additions to my company policy. I am convinced the professional services that Mediright provide will not only save money across Industry and the NHS but more importantly save lives."



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## Bucket manufacturer expands with investment

**A bucket and undercarriage specialist has invested nearly £200,000 in new machinery, believed to be in use for the first time in the bucket manufacture industry.**

MST, the family-run business supplying bespoke bucket attachments and undercarriage to the mining and excavation industries has just installed the giant new CNC Milling Station, made by American firm Haas.

The large piece of machinery, measuring some 6 m across, will allow MST to accurately produce new cutting edges and attachments for its bespoke buckets in a fraction of the time it previously took with other systems.

John Whitehall, managing director of MST said. *"Given the current state of the mining and quarrying industry, this is a bold and ambitious investment by MST to help dramatically improve turn-around times for cutting edges and new attachments for our customers' buckets."*

*We are not aware of any other organisation in the UK, certainly not in the north, who has invested such sums in this highly specialised piece of equipment."*

The milling station will allow MST's dedicated team of CAD designers to download drawings directly on the station, which promises accuracy to a thousandth of a millimetre over 3 meters.



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## Insurance: Expensive, time-consuming, hassle

**These words seem to go hand in hand with insuring your business, don't they? Well it doesn't have to be like that.....**

Arthur Marsh & Son (Birmingham) Ltd are insurance specialists looking after everything to do with the recycling and waste management industry. In the past some insurers and brokers haven't treated you fairly, charging huge premiums or not even offering cover because of what you do!!!

We understand your industry, and we make sure *you are treated fairly* because we take the time to explain things to Insurers in the right way unlike other brokers out there that may not understand your business. This means you get cheaper quotes and better terms, *which saves you money.*

Because we understand the risks your business faces our specialist representatives will advise you honestly about how to protect your company and the levels of cover required. We will give you options balancing cost vs. cover and tailor the insurance policy to meet your exact needs, not over not under.

We ensure we keep up to speed with your industry through our membership of the CIWM, NSHA

and other recycling-focused organisations and we regularly exhibit at the RWM at the NEC.

We can arrange highly competitive and great value for money insurance policies including: -

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Our policies are specially written and can include extras not usually covered by other insurers such as: -

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**Quite simply our clients use us because: -**

- Our premiums are highly competitive and offer fantastic value for money
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When your insurance is coming up for renewal, give us a call and we will be happy to meet you.

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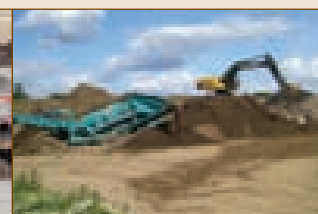
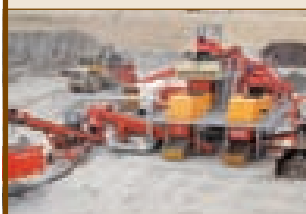
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# Recycling in the heart of the city

A large stockpile of waste had built up at Timmins waste transfer station, located in the centre of Wolverhampton, where previously construction material was sorted by hand once tipped on the ground. Ross Matthews visited the site to see how a newly installed waste transfer system is helping the company to reduce this pile and is settling into its role as an essential investment for the company as it expands its recycling into the new decade.

Timmins Waste Transfer system installed by EMS

Located in the centre of Wolverhampton, Timmins Waste Services receives waste from the around the city, Dudley and surrounding areas. The company has been offering skip services on the site since 1981. It's a family business with Brian Timmins managing the yard, while his brothers Carl and Neil run the office and lorries respectively. There are seven vehicles in the company's fleet but the site also receives waste from numerous customers.

It's mainly commingled construction waste and each day it receives some 50 tonnes of general rubbish and up to 100 tonnes of inert material.

But as it moves into 2010 Timmins is reaping the benefits of its investment in a waste recycling system designed and installed by Environmental Marketing Solutions (EMS).

Before getting the system, which comprises a trommel, feeder and picking station, Timmins had simply been bringing the waste in, tipping it and then sorting it on the ground trying to take out whatever they could. However it couldn't stop the continued growth of a large stockpile of waste. Trying to pick out items from such a stockpile out in the yard is neither productive, pleasant nor safe. Far better, reasoned Timmins, to place staff in the comfort of a picking cabin as part of a new system. Far more competitive too.

That was the rationale behind Timmins' acquisition of a waste transfer system from EMS in November 2008. "We looked at four systems but didn't find anything as robust as EMS's equipment. Its better in terms of design: for example a lot of people were trying to sell us a system where the picking cabin was just metal sheeting, rather than being insulated or heated. This EMS system offers value for money and comprises good strong working plant."

Planning issues held back installation for 12 months but when EMS arrived on site on a Monday in the beginning of October 2009 it was able to leave having successfully completed the installation by the Sunday.

EMS sales manager Denver Blemings, classifies the Timmins installation as a "mid-sized plant" for the company. "We can put up a plant like this and get them running inside a week. It's an all electric plant and from a maintenance point of view the plant is as simple as possible with easy access to all the main parts."

The picking cabin was manufactured off site and came in two sections - basically split in the middle. It was then simply craned onto the ground, joined up and then craned into position. The wall sections of the recovered material stockpile bays were also pre-built and erected beneath the picking station. "It was a heavy-enough job but EMS now has 35 plants in the UK so we are well used to it," says Denver.

Trommel with fines below



When Hub 4 went to have a look round, Timmins was in the process of getting the system up to speed and so was using it for about 2 hours a day. Now up to speed the system is running for 6 hours a day minimum.

Says Brian Timmins: "The plan is to tip the waste in the morning, sort it in the afternoon so large stockpiles and the problems they attract will not develop in the future. By getting the waste in and sorting it quickly you deal with the problem and keep the site tidy and ultimately put more waste through." The plant will allow the site to process some 600 tonnes of commingled construction waste a week.

## The system

Tipped waste is picked from the yard by bucket loader and loaded onto a 3 m long feed hopper with a 54 inch wide belt, which will take a wide variety of waste products without risk of jamming. The waste is then fed to the 823 Static Trommel Drum. The rotary trommel consists of a 2.44 m diameter x 7 m long drum with inlet and discharge rings made from 12 mm thick steel plate. The drum, which attains a speed of 10 - 30 RPM, is fitted with 40 mm punch plates through which the removed fines fall to a stockpile below. A trommel of this size will allow a throughput of 25 tph. "The trommel could do 60-80 tonne an hour but the material you are putting through needs to be slowed down for the pickers," says Denver. "Fresh material will go through quicker."

All the oversize - timber, hardcore, plastics, cardboard and paper and whatever else is in the mix, then travels up a conveyor inclined at 18 degrees, to the picking station cabin where the material is manually picked in each of the 5 bays and dropped to the stockpiles constructed below the cabin. There is room for 10 pickers in the cabin (two per bay). In

fact with the new plant, Timmins has created two jobs on site straight away.

The bays are set up to pull off timber, plastics, cardboard and any other material Timmins wants. The cabin has wide walkways with room for bins to collect non-ferrous metals and small volume, high value items such as brass and copper. The bins can be tipped down a chute to a stockpile.

To maximise the amount of picking bays in the space within the station the bays are 4 m wide and 3.5 m high, which gives plenty of scope for stockpiling material under the bay.

Once through the picking station the remaining material travels through an overband magnet, which picks off all the ferrous metals and sends them to a skip below. The pickers will have retrieved anything non-ferrous they recognise off the belt such as aluminium and brass; Eddy Current Separators are not employed, as they do not suit Timmins' waste stream, which is mostly industrial, C&D waste.

Finally at the end of the system is a 'lights' catch net to catch the light material blown off whatever comes on the hardcore, leaving Timmins with nice clean hardcore that can be reused or crushed.

Timmins worked with EMS to produce its own solution for this final bit of the system so it could maximise space. EMS had proposed putting a sealed bay under overband magnet bay so the metals would be dropped out the front and all the light materials collected at the back but Timmins wanted more room for stockpiling metals and wanted to generate an extra bay so a chute was installed into which light material is blown and taken down into the bin.

such a pile of waste does not grow again.

Brian Timmins says: *"Waste that's been sitting in stockpiles for a long time, such as cardboard, gets harder to recover as it's so damp and decomposed, which is why it's important to keep on top of these stockpiles - cardboard ends up being better quality and plastics are easier to collect."*

Brian believes that systems such as those offered by EMS are now not just an efficient convenience but they are now a business imperative. *"Companies are now having to adopt these systems so they can recover as many materials as possible and take out fines while reducing waste for landfill tax. Without these plants a lot of companies wouldn't be in business any more - they would not be able to remain competitive. Operators without them will be poking about for recoverable waste on the ground making no money."*

*"Before, we did all our sorting by hand, which was time consuming and the working conditions were harder. Since we invested in this system our recycling figures have already dramatically changed. In our opinion, in this day and age if you don't have one of these systems you cannot maximise recycling. Companies that we are dealing with now need to know that they are getting the best value for money for the materials being recycled and the only way you can do it is by having one of these plants."*

Initially, with the new system, Timmins is now sending only quarter of incoming waste to landfill. *"That will go down once the recession is out the way and we are waiting to see what happens with the markets,"* reports Brian and he sees markets for recycled products picking

because of what we are doing with recycling. Wolverhampton Council is also happy to see the plant and worked with us on it. They suggested adding walls to the site and now it doesn't look like a waste transfer station. The tidy site now looks better for the environment and the public - all they see driving past are the walls and the picking cabin up in the air instead of large piles of waste that nobody can do anything with."

So is the plant delivering the benefits for Timmins? *"Oh certainly yes,"* confirms Brian. *"Though we are in the early stages still and it's a long term investment. We are very pleased with what we have achieved so far."*

*"We are not going to get too big were we lose the personal touch so we keep business to a manageable size where the whole family are involved. We have invested over the years. We recently invested in the yard next door, concreted it, put walls and bays in and added a new weighbridge so spent a lot of money to get ready for 2010."*

*"We borrowed the money for the new system over 5 years so will be looking for a return on investment by then. We think we have done really well to make this investment at this time as a lot of people are holding back but we thought if we leave it any longer the price of the plants will go back up because once the markets pick up the plants will be in demand and the prices will inevitably go up. It's a big investment for us - we're a medium sized outfit but something like this has reduced our landfill by three quarters so it's a massive saving and now it's just a case of tweaking different materials, getting the yard emptied and starting afresh."*

As for future developments, the EMS



Loader trommel and incline conveyor



Enter the waste



The EMS Waste Transfer System

The entire EMS waste transfer system occupies a length of no more than 42 m within the confines of Timmins' site. Says Brian: *"It's a small city centre site surrounded by housing and a mosque. With the new system in, however, the planners are very pleased, as it's the closest central waste tipping site for Wolverhampton. We get a lot of waste from any jobs happening in Wolverhampton city centre and being central saves road miles traveling to larger sites out of the city centre. Customers are happy to tip here now with this plant as they can improve their recycling figures."*

During Hub's visit Timmins was in the process of reducing the large waste stockpile that had built up before the EMS system had been installed. *"On Saturday we got through 30 tonnes in an hour and a half,"* says Brian. The company will now be able to ensure that

*up. "The recession, has made the last 12 months tough for a lot of people but, for example, a local plastic company is giving us business for plastic recycling, our hardcore is used for recycled aggregate materials, soil is being used for covering rubbish over in landfill."*

*"We are extending the list of materials we are recycling - plastic, woods, paper, soil, hardcore and green waste. Carpet recycling is something that's predicted for the future. Up until 2 years ago we didn't recycle wood - now we are doing 1500 tonnes/month of recycled wood. That was previously all going to landfill so there's a big saving straight away - and we are the only station in the area with these capabilities."*

The project has also had a lot of support from the local Environment Agency. *"We've told them what we've been planning and they've been supportive*

plant was designed so that Timmins could add on if needed. *"So in 12 months if there's a lot more materials for recycling we can extend the plant,"* explains Brian. *"We have redesigned the site so that we can build round it now and we can easily extend the plant."*

Summing up the importance of the new EMS plant, Brian is unambiguous: *"I personally can't see a company without one of these plants in the next 12 months to two years surviving. We do a lot of work for companies that have recycling officers now and they inspect us to see if we have enough recycling resources in a facility like this to save their company money. Without a plant like this we would be losing contracts. There are no 'ifs or buts' about it: this system is a necessity for us."*



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\* Based on a bulk density of 1.6t/m<sup>3</sup>

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# Substantial cost and CO2 savings on in-situ recycling repairs

Bath and North East Somerset Council has saved nearly £220,000 on the cost of repairing a 400 metre long section of the B3110 Midford Road at Odd Down, on the southern outskirts of Bath. This vast saving has been achieved by the Council's Design Group, in partnership with the Council's term maintenance contractor Atkins, choosing to recycle and strengthen in-situ existing tar-bound hazardous carriageway materials, instead of using conventional full depth pavement reconstruction techniques with new bituminous materials. The existing layers throughout the depth of the road pavement were disintegrating and required strengthening.

www.hub-4.com

*Stabilised Pavements is using its Wirtgen 2500 to rotovate and treat the tar bound road to a depth of 180mm, while saving an estimated 12t of CO2 emissions.*



**Stabilised Pavements Director Gerry Howe:** "I believe in-situ recycling has to be the way forward for treating tar-bound roads in the UK."

In addition to the estimated £220,000 construction cost savings, the Design Group's first time use of in-situ recycling has also provided substantial environmental benefits. These include a vast reduction in carbon dioxide emissions and lower carbon footprint. Environmental savings were also generated from reduced transportation and production of materials, and far less use of virgin materials. Disruption to the Council's road network was also reduced.

The bulk of the construction cost saving was achieved by not having to extract and dispose of the road's existing hazardous tar bound material off site to a special licensed waste tip. Instead, the existing road materials were used as a kind of 'linear quarry' for the primary source of aggregates, which were recycled and strengthened in-situ and reduced waste. In addition an estimated 12 tonne of savings in CO2 emissions between in-situ recycling and conventional pavement reconstruction has been achieved for the site. Cold in-situ recycling contributes to considerably reducing CO2 emissions, as the technique vastly reduces the need for extraction and transportation of existing in-situ materials to landfill sites, and the production and transportation to site of virgin materials extracted from natural sources.

*"This stretch of Midford Road was in urgent need of strengthening and we found from site*

*investigations and subsequent material testing that the road pavement contained a high proportion of tar material. In conjunction with the Council's term maintenance contractor Atkins, we considered the road repair options available and concluded that in-situ recycling offered the most cost effective and environmentally beneficial solution," says BANES Project Manager and scheme Designer Konrad Lansdown. "There was approximately 1,800 t of hazardous tar material in the road pavement, which would otherwise have been extracted and disposed off-site to a special waste licensed tip at Cheltenham, about 50 miles away. Tar material disposal costs alone would have been approximately £180,000 and some of this material was classed as special hazardous waste, which meant that it probably needed incineration costing around £1,000/t.*

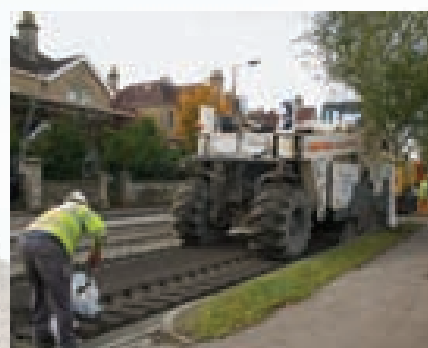
*Atkins project engineer, Jesse Smith had previous experience of in-situ recycling and with the added complication of the tar, the process proved to be the best option to reconstruct this particular section of Midford Road. In-situ recycling has shown to be less disruptive to local traffic than conventional reconstruction as we have saved about 180-200 movements of 20t wagons and improved our carbon footprint. According to our specialist in-situ recycling contractor, Stabilised Pavements, we have saved an estimated 12 tonne of CO2 emissions."*



**BANES Project Manager and scheme Designer Konrad Lansdown:** "This has been my first experience of using the in-situ repair technique and would anticipate using it on similar road strengthening schemes in future."



By using in-situ recycling Bath and North East Somerset Council has saved nearly £220,000 on the cost of repairing a 400m long section of the B3110 Midford Road on the southern outskirts of Bath.



The cement and PFA blend, applied at 8% of the in-situ tar-bound material's dry density, is mixed in to full depth in one pass of the special rotovating machine.



A blend of cement and pulverised fuel ash was spread as a blanket across the rotovated material to strengthen in-situ the tar bound road.

By adopting in-situ recycling for Midford Road the Council has also made cost savings on the bituminous base and binder courses that would have been used in conventional pavement reconstruction. "The construction work would have cost around £550,000 using conventional pavement reconstruction methods and would have taken longer and been more disruptive to road users and local residents," adds Konrad Lansdown. "The in-situ repair has proved to be operationally quicker on-site and can be trafficked almost straight away as a temporary running surface prior to applying the surface course. This has been my first experience of using the in-situ repair technique and would anticipate using it on similar road strengthening schemes in future."

The in-situ recycling process, as practised by the specialist road recycling and stabilisation contractor Stabilised Pavements, based in Lutterworth, Leicestershire, involves rotovating and pulverising damaged road pavements to depths of up to 320 mm. This is performed with a special purpose built 500 kW machine, while simultaneously mixing in specific predetermined quantities of either lime, cement, pulverised fuel ash, bitumen emulsion or foamed bitumen and water or combinations of these ingredients. The revitalised mixture is then rolled, reprofiled, re-rolled and overlaid with an appropriate final surfacing for a fast

return to traffic. The process is performed in accordance with the Transport Research Laboratory TRL Report 386: Design guide and specification for structural maintenance of highway pavements by cold in-situ recycling.

For Midford Road, Stabilised Pavements used a blend of 70% cement and 30% pulverised fuel ash applied in a powder blanket across the surface of the rotovated material at a ratio of 8% by volume of the in-situ material's dry density. The quantity of the strengthening agent was determined from pre-contract materials testing and mixed in a one-pass operation with Stabilised Pavement's German Wirtgen WR2500 Recycler at the designated depth of 180 mm. Water was added into the mix at the same time to achieve the required optimum moisture content. The cement and PFA complement each other as the cement provides an initial gain in strength of the recycled road materials, while the PFA slows hydration and contributes to increasing the strength over time.

Stabilised Pavements had to recycle and strengthen in-situ 3,868 m<sup>2</sup> of Midford Road to a 180 mm depth of tar-bound hazardous material and provide a 20-year design life for 2.5 million standard axles. The approximate 10m wide carriageway was treated in two separate halves. Whilst one half of the carriageway

was being recycled and strengthened, the other half remained open for one-way traffic during a short diversion route. Once the required levels and compaction was achieved the surface of the in-situ repaired carriageway was sprayed with a sealing tack coat and gritted as a temporary running surface for traffic. The process was then repeated for the other side of the carriageway using the adjacent recycled carriageway for one-way traffic.

"I believe in-situ recycling has to be the way forward for treating tar-bound roads in the UK, which also provides the additional bonus of a saving on CO<sub>2</sub> emissions," says Stabilised Pavements director Gerry Howe.

Although the in-situ recycled and stabilised base course bulked-up during processing the Design Group adjusted the centre-line crown levels for the new road surface. The crown was raised by 80 mm, and 10 mm along the channels, increasing the cross falls to between 6 and 7%. Atkins's surfacing contractor Bardon Contracting followed on and overlaid SPL's rejuvenated full width road base with a 50 mm thick hot rolled asphalt surface course for a fast return to full traffic.



770 Trak Trommel at Jack Moody Limited



## Jack Moody strengthens sustainable future



Neil Bailey and Robert Moody

**Jack Moody's inert recycling business has expanded its extensive fleet of machinery with the purchase of two Terex Finlay 770 Trak Trommels.**

Jack Moody's latest purchase takes the total number of Terex Finlay Trommels supplied by Finlay Plant Central - part of the Finlay Group of companies - to five.

Chosen for their flexibility, performance, capability and accuracy in the

separation and screening process, the new 770s are being used by Jack Moody in the production of high-quality soil and peat free compost.

The 770 Trak model offers maximum on-site mobility incorporating a Twin Track undercarriage, which can be controlled with a hand held radio control. The machines are fully self-contained with all functions hydraulically controlled, allowing them to be ready for work or transport within minutes.

This mobility allows the machinery to operate between Jack Moody's sites, including its 55 acre headquarters in Cannock - designated as a 'best practice site' by WRAP - and satellite centres near Stafford and Telford.

Each year, around a quarter of a million tonnes of biodegradable green and food waste - collected from more than one and a half million homes in the Midlands - is diverted from landfill, as a result of the company's operations.

Jack Moody uses the latest techniques and stringent quality control procedures to recycle this waste into various grades of compost, soils and aggregates, to meet a variety of clients' needs.

This includes topsoil to BS 3882 and NHBC standards for house builders, sports pitches, land reclamation and general landscaping. A complementary range of construction aggregates such as MOT Type 1, 6F2 and single size materials are also produced for construction projects.

The products also service the needs of Jack Moody's own established landscaping division - which for more than 40 years has specialised in the construction and maintenance of living landscapes. High-grade compost produced under

Jack Moody Limited's Care brand, is marketed through their own retail outlet, Hollybush Garden Centre - located at the Cannock site - and their cash and carry nursery company. The bagged product is also sold through local authority civic amenity sites throughout the West Midlands.

Recently, Jack Moody has moved into new markets with the production of natural, environmentally-friendly fuels in the form of pellets and chips, which are 100% wood and 100% recycled. A Terex Finlay 770, supplied by Finlay Plant Central in 2006, is pre-screening material as part of the manufacturing process.

As well as placing strong emphasis on quality, excellence and innovation, Jack Moody also undertakes an educational role in the industry. It works closely with local authorities in the Midlands to deliver a range of educational initiatives - involving schools and communities across the region - that illustrate the benefits of sustainable waste management.

Key to maintaining their industry-leading position has been the specification of high performance plant and machinery.

Robert Moody, managing director of Jack Moody, says "Our whole business is based on creating quality products and this machinery - coupled with the service and support we receive from Finlay Plant Central - helps us to achieve that.

*"One is specified with a swivel fines conveyor to maximise stockpiling capacity. It is producing a minus 10 mm top soil and a clean recycled 40mm drainage stone.*

*"There can be difficulty screening smaller sizes, but the length of the 770's trommel barrel makes the process more accurate, delivering clean aggregate without fines.*

*"The other new 770 is producing high-grade compost, up to a 10mm size and the level of output is excellent."*

Neil Bailey, sales engineer at Finlay Plant Central, has worked closely with Robert Moody to bring the machinery on site. Neil says: "Over the years we have introduced a range of machinery to support operations at Jack Moody Limited.

*"The company is constantly bringing new ideas to the fore and the machinery we provide is able to offer the necessary performance and capability to meet their needs."*



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## Waste sector optimism



**Whilst 2009 has been a very tough year, premier supplier of waste compactors, balers and baling equipment Dicom has been able to make a number of significant investments, a major factory refurbishment taking place at Alfreton, Derbyshire.**

New products such as the PGV600e vertical mill-size baler being launched and a new version of the CE32/30 portable waste compactor being introduced. Other investments have also been made across the business, all designed to ensure we provide the best service available for the best products in the market.

Compactor sales for the Dicom range are 14% higher in 2009 than in 2008, with a healthy order backlog for the factory to begin with in 2010.

PAAL horizontal balers have exceeded all expectations and five new machines are being built for the UK market all to be installed in first quarter of 2010.

Dicom expects 2010 to be a tough and challenging year; however it believes that the work undertaken in 2009, will further provide a sound base for growth and prosperity in 2010.



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# Willshee's takes delivery of new waste recycling plant



**In view of an increase in its requirements for recycling and reclamation, Willshee's Skip Hire recently acquired a bespoke recycling system from Blue Central. Based in Staffordshire, Willshee's serves domestic and commercial markets and, since 2006, have accepted delivery of baled and loose co-mingled material.**

*"We contacted Blue Central for a solution to our recycling requirements and one of our main concerns was that whatever system we chose coincided with our existing operations," said Director Dean Willshee. "After inspecting our site and material, Blue took us to see companies processing similar materials to our own. Their build quality was highly evident".*

The heart of their new system is a 12 m long, 1.5 m wide General Kinematics Finger Screen which employs a patented, non-binding, finger screen design that reduces blinding and blockages that can occur in difficult applications, where conventional perforated or wire mesh screens are unsuitable. Full-flow cascading decks and rugged tapered fingers produce an ideal action for the efficient and trouble-free sorting and classification of materials as diverse as mixed C&D waste and even commingled MSW. The high stroke, low frequency vibratory

motion ensures material is evenly spread and gives maximum screening efficiency. Staggered fingers and a cascading material flow prevent material bypass, which eliminates the need for secondary screening.

Willshee's GK Finger Screen features 20 mm apertures to remove fines and handles conventional waste streams and more stubborn material, such as light co-mingled waste. Material passes over two steps, turning it and maximising fines removal. The <20 mm material moves to a fines bunker, with oversize collected by a Kiverco Conveyor and transported into the picking station.

The six-bay, double-sided Kiverco Picking Station is fully enclosed with heating and lighting, is 6m in length and equipped with 1.3 m wide chutes, allowing bulkier items to be picked easily and dropped into the bays below. The system enables Willshee's to remove fines, plastic, paper, cardboard, wood, metal and hardcore from their waste stream with maximum efficiency.

"We are delighted with our recycling plant and already notice the major financial benefit of diverting waste from landfill. Our recycling rate is now up to as much as 95%," says Dean Willshee.



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## Perfect planning prevents pathetic performance .....

# SHOWPLACE

**Showplace is a leading provider of exhibition services to the construction industry, specialising in delivering a turn-key solution for its clients. Established in 1987, Showplace has been working with an extensive range of construction industry companies at a wide variety of events throughout the UK and Europe.**


This year we are focusing our efforts on making sure that our clients are using their exhibition budgets carefully and getting the most out of them. It is vital that people spend time planning properly to ensure that they go to the right exhibition and generate the maximum return on time and effort. With SED now cancelled, UK companies are now left with Hillhead and Bauma to choose from if they are going to gain some ground on their competitors and generate new business in this difficult economic climate.

The Bauma exhibition starts 19th April and Showplace has already signed a number of contracts with UK companies. This is to design, build and deliver their stands. Most of our clients prefer a "turn-key" solution at this type of event, it means that they can arrive on the day and start trading and doing deals, rather than having to hoover the carpet or sort the signage out.


Bauma is now the biggest construction show in Europe attracting a vast range of exhibitors from right across the construction industry some 3,000 companies from 191 different countries attend the show, add to this the 500,000 decision makers that visit and you have got a great event to sell to. This is why it is so important to get every aspect of your stand right from the layout, through to the visual element and even hospitality side, it all adds up to getting the most out of your budget.

The four most important points to remember when doing this type of event is,

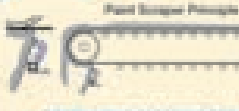
- 1) Planning ... make sure you don't rush any part of this; allow enough time to make the right decisions. If you don't it will put pressure on your budget.
- 2) The look ... The stand must look inviting to potential clients; it must be clearly signed and accessible from all surrounding aisles. Don't start putting barriers between you and the customers.
- 3) The message. What are you trying to tell your customers? new product, new service, better value, whatever it is you must be clear how you get the message across.
- 4) Delivery ... Make sure that this part is right, remember why you are there, it's to get new customers and to generate business. The most important point is to make it an enjoyable experience for everyone involved, remember perfect planning .....



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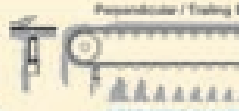


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## Caton Recycling choose Ultra T-1500 Trommel

**Ultra Plant International have supplied Caton Recycling Ltd based in Warwickshire with a new Ultra T - 1500 Compact trommel screen.** Caton Recycling managing director Andrew Caton will use The Ultra T-1500 for woodchip bio fuel screening and high grade compost production. When asked why he had chosen the Ultra Trommel T-1500, Andrew Caton said "We had been looking at a range of compact trommel screens for our operation outside Nuneaton, and found it a challenge to source a compact trommel screen that would be dynamic enough to use on a range of applications within our business, as well as giving high output but still be compact in size". *"The Ultra trommel Screen has a larger trommel drum than other compact trommel screens on the market at the moment, it's a robust machine, and gives high quality output which ultimately makes Caton Recycling more profit"*. Caton recycling who have been established over eight years are now producing wood chip for biomass heating systems, and supplying to local businesses and councils who have installed biomass boilers. The Ultra T-1500 trommel screen is used to screen recycled and shredded timber products to a consistent size, which is vital to the function of biomass boiler systems. Manufactured in Dungannon, Northern Ireland, the Ultra T-1500 Compact Trommel screen boasts a 1.5 metre diameter by 2.5 metre length trommel drum with Feed hopper, both variable speed which enables the user to have full control over the application production. The Trommel screen is designed to deal with a wide range of materials, and the easy interchangeable trommel drum system enables the screen to be quickly and easily changed for different screening applications such as compost, topsoil and woodchip applications as well as aggregate and skip waste. Kevin Gates, Managing Director of Ultra plant international said "The Ultra T-1500 Trommel Screen turns waste into wealth on a range of applications, the machine is designed to offer customers the compactness of a small unit, but with the screening production of a larger unit, why have a phonebox when you can have a mobile phone!" Ultra Plant International Ltd are seeking Dealers throughout the UK. For all queries in relation to the Ultra T-1500 contact: Michael McMenamin  
Ultra Plant International Ltd, 35b Farlough Road, Dungannon, Co Tyrone Northern Ireland BT714DU  
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Web: [www.ultraplantltd.com](http://www.ultraplantltd.com)



## Three screening machines for a leading Belgium energy supplier

**Rhewum has been awarded the contract by Geldof NV to supply three screening machines for a leading Belgian energy supplier.**

The screening machines type WA 220 x 538/1 including corresponding distributing feeders have been installed at Electrabel's site in Nijmegen in the Netherlands.

With a feed capacity of 120 m<sup>3</sup>/hr for each screen it has to be guaranteed that the crushed wood pellets will be separated from any oversize product. Such oversize grains would possibly lead to a clogging of the downstream processing units that blow the crushed wood pellets into conventional steam boilers. The partial replacement of coal dust through crushed wood pellets as a source of emission allows to shift CO<sub>2</sub> emissions of conventional energy sources to renewable ones.

This demanding screening application is addressed by Rhewum WA screening machines with their efficient electro-magnetic drive system. The Rhewum electro-magnetic vibrating heads are the optimum solution for keeping the screen cloths free from any product cloggings and when applying very fine screen cuts at high feed rates. The deciding factor for the screening is the high accelerations achieved by the magnetic drives. The inclination of the screening machine which classifies the feed product according to the projected mesh size further assists to prevent any cakings through wood fibers, which themselves are being fluidised by means of the high-frequency oscillations. A flat standing screening machine - for example a Rhewum MDS screen - would not ensure a keeping-free of the screen cloths.

The crushed wood pellets flow at high speed over the screen cloths. Even at this high processing speed the screen installation length of 5.38 m in combination with the high frequency of the electro-magnetic drives ensure that each particle will frequently be in contact with the applied screen cloths for being screened out eventually.

# More product with less energy

**Ross Matthews visits Hanson's replacement marine sand and gravel processing plant at Frindsbury Wharf to see how the operation has improved safety and boosted efficiency**

Located opposite Chatham's Historic Dockyards on the River Medway in Kent, Hanson's replacement marine sand and gravel processing plant at Frindsbury Wharf is providing increased productivity yet with significantly reduced energy use. The operation supplies concrete producing materials such as 10 mm, 20 mm 40 mm aggregates and sharp washed sand to predominately ready mixed concrete outlets within a 20 mile radius, and also including the Aggregate Industries bagging plant situated next door.

The site was conceived in 1989 out of marshland and features a 200 m cofferdam with a jetty that receives cargoes of sea-dredged aggregate from Hanson's own fleet, predominately from the Norfolk coast and the English Channel. Hanson had been operating the old plant since March 1990. *"It was basically mobile kit stuck up on stilts which corroded quite quickly,"* says Mike Smith, unit manager at Frindsbury. The old plant

was fed by a loading shovel, which carried materials to be processed 120 metres to the plant feed hopper. Crushing of larger sizes involved mobile equipment. This meant that materials were first processed then stored, crushed and then processed again.

So five years ago, Hanson submitted applications for the current fully automated plant Hub magazine is walking around today, that eliminates the double dandling. Planning was achieved a year later and the plant was completed in March 2009.

With the historic dockyards as well as residents just across the river, Hanson held an open day to explain the benefits that the new plant would deliver, such as less dust and noise and the fact that operation would no longer have to be 24 hours a day due to its increased productivity.

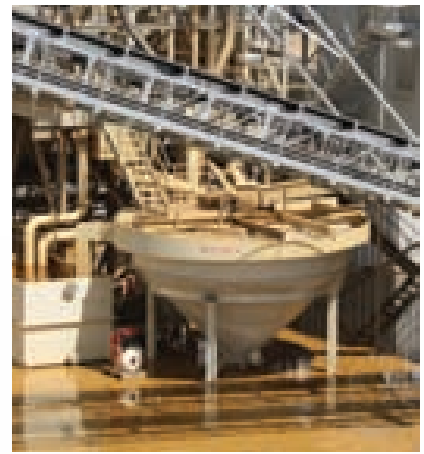


One of the Skako feeders supplied by Centristic

*"Aesthetically, the site has improved tremendously,"* says Mike. *"Furthermore, it's state-of-the-art in terms of conservation of electricity and conservation of water. All these issues were explained during the day. From that we achieved the planning quite quickly and we still kept the 24 operation ability in the unlikely event that this is required - it's unlikely because the capacity of the new plant is substantially higher than the old plant."*



Sand washing plant and effluent treatment



The old plant operated at approximately 150 tph. At its maximum the new plant will hit 550-600 tph, depending on operation mode and the material going through it. *"Different dredging areas give a different make-up of the product we are trying to screen - from very fine to very coarse,"* says Mike.

The principal contractor for the project was Centristic, which designed, manufactured, erected and commissioned the structures, chutework, hoppers, bins and conveyors, supplied the three Skako Comessa feeders and installed the free issue Sandvik crushers and screens. A Linatex sand plant and Haith thickener system were separately contracted to Hanson. The civils were designed by the Millward Partnership and constructed by Firgrove, while the electrics installed by IES.

## The operation

Various grades of raw marine aggregates are transported to Frindsbury by ship - 4500-5000 tonnes of product at a time - and ground stockpiled for plant processing. It takes about 4.5 hours to discharge around high water.

The three feeders carry out the principle discharge functions. In addition to the feeder trough the design includes the integral hopper bottom section, incorporating skirt plates, bed depth regulation gate, and pivoting helical coil spring suspension system. All the feeders are galvanised to suit the 'salty' corrosive environment and to handle the abrasive feed material, both the hopper bottom sections and feeder trays are lined with Hardox 400 replaceable liner plates.

To achieve the optimum blend of the variable raw material feed stock, the primary feed (through a ground hopper) is partitioned into two, with a Skako feeder located under each side, each arranged to centrally discharge onto the main plant feed conveyor.

Each of the two primary dump hopper discharge feeders is 1000 mm wide and individually capable of discharging the required feed rate. However, it is more normal to operate both feeders simultaneously, allowing the optimum blend of raw feedstock to be achieved. In order to efficiently handle the variable feed stock,

(generally 100 mm down), each feeder is driven by twin unbalanced vibrator motors, with variable feed rate control allowing infinite regulation between approximately 30 -100% of the preset maximum, achieved via electrical frequency inverters.

*"The Skako feeders can be run either manually or automatically," explains Mike. "They can be run as a pair or individually. At the computer screen we can vary the percentage each feeder is working at the touch of the button on the computer control screen. This is how we blend the material."*

The main feed is fed to a large Scalpings screen + 100mm is rejected from the top deck to external storage bay, whilst the lower deck screens + 40 to 100mm clean stone for crushing and -32mm feed material to the wet screen house.

Oversize 40-100 mm goes back through a crusher house where there are two Sandvik CH430 crushers: one for coarse, the other for fine. There is a splitter screen in there and two bins, one on top of each crusher, the 40 mm in one and the oversize 40-100 mm goes into another bin and we crush those separately. That is re-fed onto the main feed conveyor, which goes up to the wet screen house comprising two double deck screens, washing take place on both decks of each screen to ensure clean single size 10 and 20mm gravel, there is also a + 20mm re-feed conveyor return to the crusher house.

The Sandvik crushers replace the old plant's mobile, diesel-powered crusher. They automatically power down when not needed, enabling a power saving of 132,000 kW a year. Sandvik's ASRI control system looks after the wear rate, which can be displayed on a daily basis allowing planned changes of wear parts. Two metal detectors on the conveyors ensure anything metal is kept out of the crushers.

## Washing the sand

In the washhouse the plant separates the single size stones and flumes down the water/sand product into the Linatex Sand Processing and Screen Dewatering System, which washes and dewateres the sand fraction to reduce the silt content in the final product. It extracts fines using cyclone circuits and dewateres the

product on a screen, achieving a 10.5-11% moisture content. It includes a large effluent tank and a pump to handle the dirty water. Wash water and fines emanating from the aggregate washing and sand system is treated by the Effluent Treatment System, supplied by Haith, which provides high quality treated water that can be used by the system.

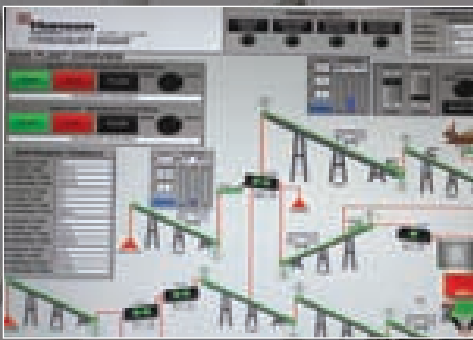
The feed of material and water is flumed down to the centre of a feed regulating sump. From the base of the sump a pump draws the slurry and feeds two sets of extended Sand Separators to maximise sand/water separation, each set feeding onto two dewatering vibration screens. Fines water from the separator is returned to the effluent tank. The underflow from the dewatering screen sumps is re-circulated back to the regulating sump. Dirty water collected in the effluent tank is pumped into the Haith Thickener for treatment.

## Effluent treatment

Wash water and silt emanating from the aggregate washing and sand system is treated by an Effluent Treatment System, supplied by Haith, which provides high quality treated water that can be used by the system.

Interlocked with the effluent delivery pump feeding the thickener delivers the pre-prepared flocculent solution stored in a multi-compartment powder system equipped with a 25 kg storage hopper. Once charged with flocculent powder the system makes up flocculent to pre-set solution strength on demand. The multi-compartment system prevents shortcutting and so ensures all product is fully matures before use.

The addition of flocculent is required to achieve solids liquid separation within the thickener giving rise to a thickened slurry underflow being discharged at the base of the cone shaped vessel and clear supernatant being discharged over the weir plates fixed to the inner face of the peripheral gallery on top of the thickener. The thickener internal rake system runs continually and maximises solids compaction by releasing the entrained layers of water that may be trapped in the sludge blanket. They also ensure that the compacted solids are directed towards the cone outlet and underflow pump suction. ►



**Main plant overview**

The clarified water flows by gravity into a new clean water storage tank fitted with two pumps, one being main feed water to the screen house and the other required for sparging high pressure water to the bottom of the thickener cone to act as a stirring agent if required.

The thickened underflow is extracted from the clarifier via a centrifugal pump, sized to manage the thickened fines. The control system links this pump via a pressure transducer within the thickener drive to continually monitoring the torque / load on the rake system, which is an indication of the fines density. Using pre-set limits on this control enables fines of a predictable, consistent specific gravity to be discharged onto the dewatering sand screens. Haith's Autofloc inline measurement of the incoming solids, assessing the dosing level required to maintain the water quality set during commissioning.

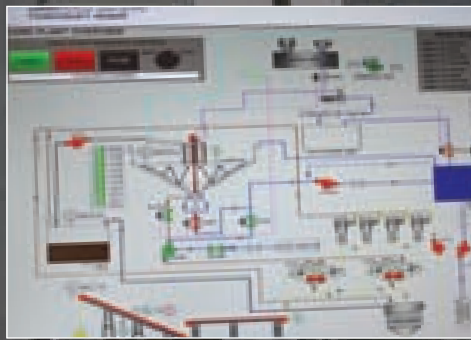
Explaining the combination of the Linatex and Haith systems, Mike says: *"Within the product there is always some fine material, which the sand plant doesn't take out and it ends up going back into the water system. So the Haith thickener allows the fines to coagulate together and fall to the bottom to be then pumped back onto the Linatex screens and out into the sand. Effectively it's a closed circuit: we are recycling water all the time, which is a huge benefit. With the old plant we were producing silt or fines at the rate of approximately 250-500 tonne a month. So we would buy the product and then end up producing an unsaleable product that had to go to landfill: a lose/lose situation. By combining the Linatex plant and Haith thickener working in conjunction we are utilising all of the product that ends up back in the sand."*

Mike adds: *"The other big advantage of this system is that we have a polydosing system that is monitored consistently to give the optimum amount of flocculent to make the fines coagulate. There's a tremendous saving in cost on that as well."*

### Significant benefits

End product is stockpiled in locations just a short travel distance for loading shovels supplying materials to Aggregate Industries. The footprints are as big as possible to eliminate double handling: the 10 and 20 mm piles are approximately 10,000 tonnes while the sharp washed sand is round about 20,000 tonnes. *"The site previously had small stockpiles and we were continuously moving material,"* says Mike. *"Now we can load straight from stockpiles and this saves fuel, wear and tare on loading shovels. The cost saving in fuel has dropped from about 24 litres per hour down to approximately 19 purely because the shovel is running very short distances and it's not having to rush. That's a significant saving."*

Frindsbury is now a 1.2 million tonne a year plant, without having to work 24 hours a day. *"We don't have to produce as often as we did before to reach the sales target,"*



**Sand plant overview**

says Mike. *"On the old plant, we worked essentially 24 hours a day to produce approximately 400,000 tonnes a year. So the new plant is extremely efficient."*

One of the other important savings we've found is that on the old plant, the feed hopper was a significant distance from the raw material, so what we've done is brought the feed hoppers much closer to the ship discharge point, so the loading shovel doesn't have to travel so far. One loading shovel (a Komatsu W500) can feed the plant at 600 tph quite comfortably." This reduces fuel consumption by 28% and increases throughput by a factor of 2.5.

Eliminating the old mobile crushing equipment meanwhile gives further fuel savings of 75,000 litres.

Hanson has full control over the new plant, which can be started or shut down (in sequence) by pressing a single button. The computer-based control system provides full diagnostics and Hanson can control all of the plant's numerous parameters remotely and fine tune the system. Each of the plant's stations has a control box with internet cables coming out of it to communicate with control room, this means adjustments can be made without the need to rewire. All the plant's cabling is underground.

*"We keep daily and running records of the water we use, belt wares on the main conveyor, the kW hours we are using as well as running totals of materials produced. This all goes into a reporting system, which gives directors a clear view of performance of plant through key performance indicators (KPI)s."*

In addition to numerous health and safety aspects, the design allows easy maintenance with walkways giving access to all areas of the whole structure, which is double-dip galvanised to marine standard. Because components kept predominantly to four sizes, spares inventory is minimised. The external lighting is accessible from inside the plant buildings so scaffolding towers are not required for maintenance, continuing this theme, the internal lighting is placed at a low height to eliminate the need for ladders.

Installation was carried out in two parts: building one half of the new installation while the old plant - essentially mobile kit mounted on stilts - continued operating until it was time to shut it down. The build commenced in May 2009, the old plant was pulled down in September 2009 and commissioning of the new plant commenced around Mid-April 2009.

Mike concludes *"The new plant is far more efficient, requires fewer staff, maintenance is easier and safer, and the access issues we had in the plant have all been eliminated."*



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# Primary breaker solves face stability issue

**A Devon-based quarry operator is using a Sandvik hydraulic breaker to solve a delicate face stability challenge on a Devon site. Supplied by local Sandvik breaker dealer M&M Plant, the 3800 kg BR4511 (formerly the Rammer G 110) is providing a productive alternative to blasting at Yalberton Tor Quarry in Paignton.**

RF Aggregates (South West) is using a Sandvik BR4511 as a safe, productive and environmentally sound alternative to blasting at a newly acquired quarry in Paignton, Devon. Mounted on a Komatsu PC450-8 hydraulic excavator, the breaker was supplied by sole UK importer Sandvik Mining and Construction via its local dealer, M&M Plant of Launceston.

RF Aggregates purchased the 5.0 hectare Yalberton Tor, and another quarry at Exeter, in 2008 when the incumbent owner went into liquidation. Previously used for the extraction of Devonian limestone, the site had also been used as an inert material landfill for the past several years. One of the first challenges facing new owners RF Aggregates was processing some of this inert material as part of an ongoing reinstatement programme. The company is now busily recycling the material, which has been placed within part of the void space so it can achieve a future objective for the recycling operation and workings of the site, with specific emphasis on 6F5, 10, 20 and 40 mm fractions.

*"We have inherited a site that due to the previous owner's circumstances had been poorly managed for some years, so our first job is a major programme of tidying and reinstatement," says RF Aggregates' project manager Mark Cage. "All the material that we're recycling is being thoroughly tested to ensure that it is not contaminated and we expect to be able to recycle more than 70% of all the remaining inert materials subject to permissions.*

## Primary Breaking

Another key challenge facing RF Aggregates is that of mineral extraction, which had previously taken place using drill and blast techniques, despite the fact that the site is bordered by a commercial and residential area. According to Cage, the previous owner's mineral extraction operations had been something of a sore point with local residents, resulting in complaints about dust and noise pollution from the site's crusher and, more importantly, the blasting operations. This, however, was only part of the blasting challenge.

*"According to our geotechnical survey, previous blasting has left several of the faces in an unstable and fractured state, rendering new blasting unsafe," Cage continues. "It was decided even before an extraction license was granted that the limestone faces would need to be stabilised, and the loose material removed. As blasting was out of the question, a primary breaker was the most logical solution all round."*

The solution came in the shape of a Sandvik BR4511 hydraulic breaker, a perfect match for the company's existing 45 tonne Komatsu excavator. Working from a 5 metre high bench, the 3800 kg breaker uses its productive blow energy to further loosen the fractured rock which is then processed through the sites crushing and screening plant. *"The Sandvik BR4511 is absolutely perfect. It does everything we hoped it would do,"* Cage continues. *"We've been very impressed with the performance so far and the operator says it is an extremely powerful piece of equipment. We particularly like the build and the special features such as the Ramlube self-lubricating systems. It is a lot cheaper to service and we are at little risk of burn outs because of the build quality."*

That build quality is about to be put to the test in earnest. Once we have completed the initial reinstatement of the quarry and convinced locals that they should no longer fear dust and noise pollution from the site's blasting operations, we can move forward to full production and maximise capacity. So far, we're over the moon with the Sandvik breaker. It's proved to be a quality investment and we look forward to really putting it to the test when the stabilisation of the faces is completed," Mark Cage concludes.



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# GD Harries shows continued loyalty to Powerscreen & Pegson



Since its inception 32 years ago, when Gerald Harries started a plant hire and road surfacing company, the organisation has witnessed steady growth and has developed into one of the largest aggregate producers in Wales. Now employing over 75 staff, GDH operate out of two quarries at Neath and Blaencilgoed, producing around 500,000 tonnes of aggregate per year. Predominantly servicing Pembrokeshire and the surrounding counties with products from dust and type 1, to 10 tonne blocks and asphalt, GD Harries pride themselves on offering the highest quality products at a competitive price.

With its recent £3 million investment in a state of the art asphalt plant, additional equipment was required to facilitate this new operation. In order to fulfil the growing demand for material, both for the new plant and to the open market, Ian Harries (son of Gerald), MD of GD Harries, opted to purchase a complete new crushing train from Blue Southern. With over 20 Powerscreen and Pegson machines in his fleet, there was no surprise when Ian opted for the combination of a Pegson 1000 Maxtrak, a Powerscreen Chieftain 2100 and a Powerscreen H 5163

Commenting on the new equipment Ian says: *"Our demand for product has never been greater with some large contracts and our new tar plant. As a result the key for us is reliability and that is why I once again choose to purchase Pegson and Powerscreen equipment."* He added: *"The 1000 Maxtrak cone has been a great addition, I'm delighted with the shape and quality of material being produced."*

The Terex Pegson 1000 Maxtrak is a high performance cone crusher which has been designed for direct feed applications without pre-screening on clean rock. Its crushing action



produces high quality aggregate and sub-base material, ensuring excellent capacity, high reduction and good product cubicity.

The crushed material is then directly fed into the Powerscreen Chieftain 2100 for an initial separation of material, with oversized being recirculated into the 1000 Maxtrak. The end product is then fed into the Powerscreen H 5163 for final sizing. The Powerscreen H range feature horizontal screens ideal for handling high volumes and for the exact, fine sizing demanded for many construction contracts. The H range is ideal in applications such as natural & crushed aggregate, coal, iron ore, overburden, recycled concrete and asphalt.



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## A stronger alternative to traditional woven wire?

**OptimumWire woven wire screen media from Major Wire Industries provides up to 40% longer wear life when compared to traditional woven wire of the same diameter. OptimumWire is manufactured with a high carbon and high manganese content, providing more resistance to abrasion and better performance for aggregate screening operations worldwide. Its high ductility, hardness and tensile strength make it less susceptible to breaking in high impact conditions and with highly abrasive materials, so it lasts longer and minimises labour, maintenance and lost production costs.**

Many operations using OptimumWire can also increase open area by choosing one smaller wire diameter size to maximise material throughput without sacrificing wear life.

OptimumWire is manufactured with the industry's most stringent wire opening tolerance of plus or minus three percent, so producers can achieve precise material passing for the screen's entire life. Each screen is woven with zero tolerance to any type of movement within the crimp or weave, which prevents the wires from rubbing against each other during use. On larger wire diameters, OptimumWire is manufactured from true hard-drawn wire, unlike most traditional woven wire that is made of "rod" that varies in diameter throughout its length and creates inconsistent crimping. Hard-drawn wire is consistent throughout, providing proper crimping and weaving and increased durability.

OptimumWire is available in a variety of crimp styles, including Double-Weave for high-impact loads and larger feed sizes, HyperSlot, and square and slotted wire. Wire diameters range from 1.2 to 19 mm with openings from 3.18 to 152 mm.



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# Dry Ideas



**Use these dewatering tips to keep your sand operation flood-free, writes John Bennington, vice president & general manager of GreyStone.**

**When fine material screws fail to remove enough moisture from their material, many sand operations decide to introduce a dewatering screen into their material flow.**

The producers who own them already know that dewatering screens typically require little maintenance. While some dewatering screens resemble traditional sizing screens that use eccentric shafts to induce their shaking motion, the majority of dewatering screens use high-frequency vibrators and have few moving parts. The screens are designed for an operator to simply flip a switch and run them, day in and day out. However, even low-maintenance machines still require some care and the minimal maintenance needed is essential to their successful operation. In addition, operator error can affect both capacity and drying capability on these simple screens.

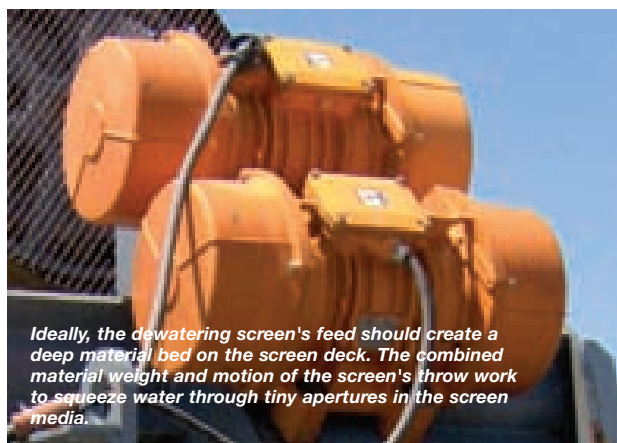
## **Opportunity For Error**

With either dewatering screen type, the theory behind water removal is the same; as the wet sand feed creates a deep material bed on the screen deck, the combined material weight and motion of the screen's throw work to squeeze water through tiny apertures in the screen media. At the same time, the throw moves the material down the screen's length. The desired result is that sand coming off the end of the screen should have a moisture content of 12% or less.

The most common complaints noted among dewatering screen operators—those of wet material and decreased capacity—are usually the result of not feeding enough material. If the screen cannot form a deep bed of sand, it will not be able to retain the product on the screen to remove the moisture and will also have trouble effectively moving the sand down the length of the screen. It is the vertical/diagonal vibrating motion of the screen, along with the inertia of the sand, that work to squeeze the water through openings in the screen media. The thinner the bed depth, the lower the inertia, resulting in lost and wet material—ultimately defeating the purpose of a dewatering screen.

Another common mistake among producers who are not familiar with dewatering screens is purchasing a unit based on desired plant capacity, rather than current production capability. In order for the screen to handle the feed correctly and create the ideal bed depth, the producer must look realistically at the plant's current production numbers. A high-capacity dewatering screen that is too large for the feed will not effectively dewater or move the material.

Most dewatering screens allow for adjustment of the throw and the screen's angle of incline—from horizontal to about 5 degrees uphill or downhill. Both adjustments can affect the capacity of the screen and its drying capability. If an operator adjusts the screen for a steeper uphill angle with less throw, it will require that less tonnage be introduced to the screen. The opposite is also true, with a horizontal screen or downhill angle with a harder throw



allowing higher feed tonnage. Producers should initially work with the manufacturer to adjust the screen for the best angle and throw to meet their desired results. Later, if material properties change or production increases or decreases, the manufacturer and/or the equipment dealer can help determine the best settings and recalibrate the unit to operate under new parameters.

## **Media Maintenance**

With sizing screens, the purpose of the screen media is for the material to go through the openings. With a dewatering screen, the goal is to retain the material on the deck, allowing only the water to filter through. Dewatering screen media does not wear as fast as media used on sizing screens, but when it does wear, it should be replaced immediately. Although dewatering urethane typically tends to wear at the surface of the screen, instead of the openings, any wear that does appear at the openings will allow saleable material to fall through the screen along with the water. In addition, because the openings are very fine, they can punch through or tear easily if stepped on or if tools are dropped on the screen panels. In order to ensure retained product, the media should be examined regularly for signs of wear or holes, and worn or torn panels should be replaced.



**Dewatered sand coming off the end of the screen should have a moisture content of 12 percent or less.**

*If the feed does not create a proper bed depth, the result will be wet material and decreased capacity. The thinner the bed depth, the lower the inertia, resulting in lost and wet material-ultimately defeating the purpose of a dewatering screen.*

*Because of their great speed and linear throw, vibrating motors generate a lot of force driving up and down. These motors and their mounting apparatus must be kept properly maintained, or they can destroy themselves rapidly and create safety hazards.*



## Motor Matters

**Vibrating Motors:** For dewatering screens that use high-frequency vibrating motors, operators need to know that these motors run fast, from 900 to 1800 rpm, depending on the screen and motor. Additionally, their linear throw can equal up to 6 g (six times the force of gravity, which means that one ton of sand is equal to six tons-or 12,000 lbs-of force), so they generate a lot of force driving up and down. If these motors and their mounting apparatus are not kept properly maintained, they can destroy themselves rapidly and create safety hazards.

As a standard step in safety and operating the machine efficiently, producers need to maintain the bearings on the motors, following manufacturer-recommended intervals. The motor's manufacturer provides greasing schedules for the bearings, as well as startup procedures, which should be included in the screen manufacturer's operation and maintenance manual.

Ensure that bolts are tightened to the correct specifications. If the bolts or the frame are cracked, repair them immediately. Most manufacturers will recommend checking the torque on the bolts prior to initial startup when the unit is first installed, followed by regular inspections at least twice a year. Inspect the motor mount regularly; if cracks are found, repair them immediately.

**Eccentric Drives:** for eccentric shaft dewatering screens, the maintenance of the motors and bearings is similar to that of traditional sizing screens. Manufacturers should provide schedules for maintenance, but most recommend checking the belt torque on the wheel case approximately four times a year. It is a good idea to check the drive belt and sheaves daily, as well as for leakage from the drive shaft seal. The pillow block bearings should be greased every couple of weeks or according to recommended intervals. Producers should also check the wheel case oil for contamination after 250 hours of operation and change it according to manufacturer specifications.

While dewatering screens are not that maintenance intensive, understanding how they perform and what maintenance is important will guarantee long-term success.



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## GreyStone Dewatering Screens

GreyStone offers three models of Dewatering Screens-the DS-488 (4 x 8-ft), DS-6010 (5 x 10 ft) and DS-7212 (6 x 12 ft)-to handle a variety of capacities and efficiently dewater up to 350 tph. Many concrete and masonry sands typically retain from 18 to 24% moisture, which requires drying time in the pile. At process end, the GreyStone Dewatering Screen cuts that moisture down to as low as 10%-providing saleable material in less than a day.

# Reclaiming sludge lagoons

**Can quarries reclaim land back from their sludge lagoons? David MacLynn, director at ALLU UK believes they can by using mass stabilisation.**

Sludge lagoons are a fact of life in most quarries where they are employed for the disposal of slurry from the quarrying process to settle and form sludge. Constituting a simple and cost-effective method for dewatering of sludge - where thickening, dewatering, storage and stabilisation all happens simultaneously - these lagoons are sometimes worked until filled completely with sludge but they are also frequently drained and digested material is removed at intervals for other use, depending upon the nature and contamination of the sludge.

For many quarries however, sludge lagoons become an obstruction or space occupier over time. But there is an effective solution for turning these lagoons into useable land: mass stabilisation. This is a method of stabilising soft soils by adding binders to reduce settlements and/or improve the stability of the land. It can be a quick and cost effective solution for transforming sludge into solid layers compared to traditional methods such as piling or mass change conditions and it saves materials and energy. The rapid ground improvement method can be adapted to varying soil, improving its engineering properties so it can be flexibly linked with other structures and with the surroundings without harmful settlement differences. Because the natural soil does not have to be transported elsewhere there is no need for disposal sites and offsite transport, so reducing transportation and traffic pollution.

With the ALLU Stabilisation system, for instance, you can gain access even if the ground is a swamp where it is not possible to walk. The method can also be used to treat contaminated land by encapsulating contaminants within the ground and prevent the leaching to the surrounding areas. This makes it a potentially effective solution for stabilising a sludge lagoon and turning it into a useable area for storage, stockpiles, plant or buildings.

To see how this is possible, consider the situation of the Vuosaari Harbour in Helsinki, Finland. Where mass stabilisation of approximately 500 000 m<sup>3</sup> of dredged sediments over a 75 hectare area contaminated by TBT (Tributyl tin) was carried out.

TBT is an organic tin compound that is harmful, especially for primitive marine organisms such as molluscs. Construction work in 2003 for the harbour uncovered elevated concentrations of TBT in the seabed outside the harbour. TBT concentrations in the surface sediments and in a small area also in a



deeper sediment layer were found to be so high that the sediment to be dredged in the area could not be dumped in the sea and the dredging had to stop.

A method was devised to allow the TBT to be removed from the bottom sediments in an environmentally safe manner and permanently isolated from the aqueous environment and the harbour surroundings. The most strongly contaminated TBT-containing sediment would be dredged, stabilised and used for the harbour's structures.

The overall solution comprised three phases. First the contaminated area was isolated with the aid of a permanent protective embankments and a temporary curtain structure. Next, the sediment was removed by decontamination dredging the contaminated area. Finally, the TBT sediment was stabilised by mass stabilisation and then used in the harbour's structures.

The embankments were dredged first. Before construction of the embankments, the slightly TBT-contaminated surface sediment was skimmed off with a cautious dredging technique, and placed in temporary storage in a temporarily excavated rock pool nearby. Other dredging materials were transported to a dumping area in the sea. The embankments then formed part of the harbour structure. The protective curtain between the embankments, which is impervious to solids, was fastened to a pontoon structure anchored to the bottom. The flexible curtain followed the profile of the seabed.

Because the decontamination dredging was carried out inside the contained area, TBT was unable to spread into the environment. The protective embankments also prevented turbidity caused by later dredging of clean materials from spreading to surrounding waters. About 95% of the TBT in the harbour area's sediments was inside the contained area.

The TBT-contaminated sediments were then placed in two basins in an area by the harbour, where they were stabilised into a layer about 5 m thick, serving as

a part of the harbour's structures. The sediments were then stabilised by mixing them with cement and other stabilisers to gain a load-carrying harbour structure.

About 0.5 million cubic metres of TBT-contaminated sediment was mass stabilised by a dry mixing method with Portland cement. The amount of cement was 130 kg/m<sup>3</sup> of sediment. The stabilised sediment was covered immediately by a filter fabric and 1 m high preloading embankment. Later, 90 days after stabilisation a higher preloading embankment was built at the area to ensure the compression of the stabilized layer.

The mass stabilisation work started in December 2005 and was completed in December 2006. The preloading embankment was removed over a period of 6-14 months after loading time, which was determined according to the settlement observations. When the last pre-loading embankment was removed in June 2007, the drainage and surface layers with an asphalt layer on top, as well as the drainage pipe system to minimise water pressure to the structure, were built.

The stabilised TBT-containing sediments obviated the need for blasted rock and sea sand that otherwise would be needed in constructing the harbour. The most strongly contaminated sediment is estimated to amount to about 300,000 m<sup>3</sup>.

The mass stabilisation method has proved competitive when ground improvement of soft soils solutions are sought for beneficial use of dredged sediments. In this instance the mass stabilisation of TBT-contaminated dredged sediment in Vuosaari is not only an excellent example of a successful of co-operation between the project owner, and the various contractors and experts but also a demonstration of what is possible when it comes to dealing reclaiming land occupied sludge lagoons in quarries.



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# Power to the quarry

**There is no need to dig deep for generator solutions, writes, Simon Long, sales manager, at the Shenton Group**

**While most quarries are now connected to the national grid they are also predominantly located in areas where powercuts frequently occur. Therefore ensuring a constant and stable power supply to the site is essential to avoid disruption to services.** The first step in providing power protection is to understand the leading causes of power-related problems. A myth to dispel is that power is perfect. Research carried out on power supply disturbances, throughout Europe shows great differences from place to place and between different types of installations. Here are a few important facts and figures about power outages:

Over one third of companies take more than a day to recover from the disruption caused by a power failure; 10% take more than a week.

Because of a power failure, 33% of companies lose between £10 000 and £250 000; 20% lose between £250 000 and £1 million while 15% lose over £1 million. Insurance claims take a long time to settle - well after the disaster has occurred and 90% of all companies that experience a computer disaster and don't have a survival plan go out of business within 18 months (Source: Price Waterhouse).

For quarry managers who have adopted a 'crossed fingers' strategy towards potential power related disasters, its time to take action against the distinct probability of a potentially catastrophic mains failure. A range of generators are available from small units that can power up a single appliance to large systems that are suitable for all major Prime Power and Standby power applications.

## AC or DC

The mix of equipment making up the load will most likely decide the choice between AC and DC power for sites. When selecting an AC generator a number of points need to be considered. A proportion of the load is likely to consist of non-linear switch-mode equipment and this can adversely affect the alternator's performance because of harmonic distortion reflected to the generator output. In extreme cases, the engine speed, and consequently the electrical frequency of the generator, can become unstable as

the governing system overreacts to instantaneous load changes. Over speed protection devices can also be fooled by the harmonic 'peaks', causing the generator to shut down under false alarm.

Over sizing the alternator capacity can greatly assist in meeting this problem and a minimum factor of 1.6 should be applied to the load rating to calculate the minimum alternator size. A true load characteristic printout should really be obtained to accurately calculate the alternative size.

Where the bulk of the site load is DC, then a DC standby generator is a better option. It brings the advantage of freedom from problems with harmonics, with no need for changeover switching equipment. Protection against rectifier failure as well as mains power failure is also eliminated.

These units are now available down to very small outputs and larger units can be paralleled to provide redundancy and greater power outputs. For powering test equipment and other light AC loads, a small commercially available inverter can be added.

Generators are not only used for standby power at quarries but also for power up equipment such as excavators and saws. Regardless of their type, size or use generators need regular maintenance.

## Regular Service and Maintenance

Regular service and maintenance of all generators is essential to ensure consistent and reliable operation, whether being used as a prime power source or as a standby set in the event of a mains power failure. When selecting a supplier it is important to ascertain the depth and variety of service and maintenance contracts covering their systems.

## Consequences

The loss of power to premises can be catastrophic. Power cuts are also no longer a seasonal phenomenon. Every year adverse weather conditions result in power cuts across the country as local power lines are hit by trees or fail due to lightning strikes, short circuits, human error etc. resulting in disruption to domestic users and businesses alike. Businesses with critical processes or essential facilities should ensure they

have entered into a 365/24/7 maintenance agreement. They can then rest assured that their business is protected at all times from all eventualities.



By using a generator from Scorpion Power Systems, Melbury Greenstone has been able to utilise its sophisticated stone cutting equipment to full potential whilst meeting strict environmental regulations on noise pollution. The company's equipment is used for cutting stone into various sizes ranging from standard bricks to over a metre square for exclusive building projects.

A new enterprise started by farmer, David Fear, the quarry is excavating around 2000 tonnes a year of indigenous Shaftesbury Greenstone, which is being sold to local builders and developers via project managers, architects and surveyors in Southern England. The green sandstone is being dug out of a re-opened quarry, two to three metres below the surface.

Once the stone has been quarried it is transported to a cutting area for stonemasons to process. The sophisticated saws are powered by a Scorpion DI115, 115kVA three-phase generator, which is housed in a super-silent canopy to provide noise levels as low as 58 dba at 7m. Scorpion supplied the generator with an electronic speed control to reduce the effects of variable loads and keep the output voltage constant. A 12-hour based fuel tank is also fitted for continuous operation.



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## Heavy duty primary trommel screen installed at Fond des Vaulx, Wellin, Belgium

**HOLBORNE GROUP LTD. Wem, Shropshire, UK. have recently supplied a new primary trommel screen through their sales agent P.W.Laver Equipment Sales Ltd.**

The BT212 Trommel with a barrel 2.1 m. diameter x 8 m. long was commissioned in July 09 at a large quarry in south east Belgium.

The screen was installed to reclaim and clean R O Q limestone, from some of the overburden and areas of clay/soil contamination in the quarry excavations. Sited adjacent to the primary crusher haul road, material from the working face is transported via dumper trucks into the 75 ton. capacity feed hopper to pass over a 1.5m x 4m reciprocating tray feeder into the trommel barrel. The barrel is fabricated in four sections, each constructed with 75mm dia. high grade steel bars, welded to 30 and 50mm support rings giving screen apertures of 100 x 100mm over the first two sections, and 80 x 120mm over the second two sections all driven by heavy link chain and sprocket, powered by hydraulic geared motor.

The reciprocating feeder is powered by a single hydraulic cylinder with both drive units supplied by independent hydraulic pumps coupled to electric motors. With the screen apertures being relatively small for this separation Holborne supplied and installed their patented barrel cleaner mechanism

The 2m length cleaner, constructed of a series of flame cut sprockets mounted on a shaft, is supported above the barrel drum, where the sprocket teeth engage and are driven by the rotating barrel. Any sticky or pegged material is forced out of the apertures, to provide a clear section for new feed. The barrel cleaner can be extended over further sections if required. The screen oversize is collected via loading shovel and dumper to feed back into the crushing plant together with the clean rock feed. The undersize can be utilized in the quarry or marketed as fill material depending on rock content and quality.

The investment of the heavy duty Holborne trommel screen will guarantee higher grades and quality to the quarry aggregate sales, as well as reclaiming material that would otherwise be discarded.

## New GIPO mobile crushing and screening machine for Croatian company

Founded in 1956 GP KRK has its headquarters on the Croatian island of Krk. With a workforce in excess of 500 the business operates in the construction industry with a division dedicated to materials processing. This division currently operate a GIPO RC131c mobile crushing and screening plant processing rock and pebble stone.



To increase capacity the company have again purchased a GIPO machine and have invested in a R131 PB RR GIGA mobile crushing and screening plant. Weighing in at 68 tonnes the versatile machine is the epitome of efficiency with a maximum output of 350 tph. Driven by a CAT C13 475 PS engine the heavy duty chassis carries a GIPO P131 impact crusher with adjustable impact walls and a hydraulically drive double track curtain.

Material is fed into a heavy duty 6m<sup>3</sup> feed hopper and transferred by a detachable apron conveyor onto an eight unit roller grizzly (Hardox 450 discs) which also features an automatic reversing system. Material is then fed into the impactor which delivers crushed material onto a SN 1535 single deck screen.

Any oversize material can also be fed directly into the impactor via a reversible return conveyor. An added feature allows the on board screen to be transported individually by means of a hook lift system.

The company having invested in a second machine are extremely pleased with the performance of the latest addition to their processing fleet.

GIPO machines are bespoke machines built specifically for your application. Based in Switzerland the company have pioneered mobile crushing and screening and have been at the "crushing edge" for many years and have supplied many high performance machines throughout Europe.

Their engineers make a vital contribution to the ongoing development of components and machine types and their introduction of the combination of the crusher and the screen has introduced distinct space, environmental and cost advantages. They are distinguished by top quality componentry combined with diesel-hydraulic actuation offering proven longevity. New technical innovations are continually incorporated.

The UK and Ireland distributor is Aggregate, Processing & Recycling (APR) who has an accumulation of over thirty years of experience in the construction industry. This experience has been gained from design, manufacture, sales and servicing of all types of construction equipment, specializing in crushing and screening equipment.

With a huge amount of in-depth experience with most types of manufacturer's machinery and wear parts, APR believe that the GIPO range of machines are of the highest quality, highest performance and best overall value for money that is available in the UK today.



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

# Dynamic weighing:

understanding the best practice approach to achieving reliable accuracies

**Jeff Buxton of Precia Molen UK offers a practical guide to avoid the pitfalls associated with dynamic weighing, when designing a continuous or discontinuous dynamic weighing solution.**

Dynamic weighing covers a wide range of applications, associated where products, goods or vehicles are weighed whilst in motion. Most dynamic weighing applications are considered to be either continuous or discontinuous machines. Typical associated types of weighing systems available to industry today include static types (weighbridges and vessel weighing); continuous types (belt weighing and belt weigh feeders) and discontinuous (check weighers and batching systems).

What are the problems associated with the design of belt weighing and what is the best practice approach to achieve accurate, reliable and cost effective weighing solutions that are suitable for legal and non legal trade use, ie 'any products or service sold by weight, the weighing equipment used is controlled by legal metrology legislation and such legal for trade equipment comes under the scrutiny of Weights and Measures Authorities around the world'? First of all let's start with some definitions.

## Static weighing

This is where a static load is placed on a weigh scale and the individual weight is recorded, for example a weighbridge.

## Dynamic weighing

Dynamic weighing can be either continuous or discontinuous by a weight passing over a weigh scale within a given time and at a known speed for the gross weight to be calculated, for example a ship loading system.

## Weight and mass.

The mass of any object represents the quantity of the material it contains, it is independent of physical changes such as gravity, temperature and altitude. The standards of mass are referred to as weight. The international unit of mass is the kilogram, defined as the mass of the international prototype kilogram, which is held at the International Bureau of Weights and Measures.

The term weight is ambiguous and is used to describe both mass and force, although the SI system clearly differentiates between mass and force, with no reference to the term weight. Scales that work by measuring the gravitational force on an object rather than comparing one to the mass with another are, therefore, only technically correct if calibrated and used in the same location.

## Weighbridge.

The weighbridge uses a static platform and is essentially formed from a single element: a "Scale structure" fitted with load cell technology to measures.

A weighbridge is the simplest method of weighing material passing over a weigh scale, used to measure the weight of a product, ie, 'the vehicle' passing over a scale. The vehicle drives on, remains static, weight is recorded, the vehicle drives off making the use of the weighbridge a discontinuous form of weight measurement and is used extensively in all types of industries. Making the weighbridge suitable for legal trade use by using approved calibration practices and verification using certified test weights, thus achieving a guaranteed accuracy of 0.25% by weight.

## Belt scales

Belt scales are used to measure the weight of material on a belt conveyor and are used extensively in the mining, quarrying and material handling industries.

A typical belt scale consists of one or more roller sections mounted onto one or more load cells through a structure or a flexure with a single load cell. The structure is mounted into the belt system to replace one or more of the existing rollers. Belt speed typically measured by means of a pulse generator receiving the signal from the rotating source.

Multiplying belt loading by belt speed gives flow rate then by the integration within the control electronics, the total weight of material conveyed in a given time can be calculated.

Flow Rate =  $m/s \times s/t$  where  $m/s =$

weight of material per unit length of belt and  $s/t$  = belt displacement per time.

The accuracy of any belt scale is dependent on a number of influencing properties, such as the material to be conveyed; the belt's angle of incline, tension and speed; roller efficiency, the alignment and uniformity of the belt and uniformity of the belt loading.

A beltweigher comprises three elements: a scale structure with load cells to measure the product weight (W); a speed transmitter with a proximity switch to measure the belt speed (S) and a controller to integrate weight variation through time to calculate the flow rate (T). Throughput  $T = W \times S$ . It is therefore very important to consider the following when designing the belt and the accuracy required.

## Material handling

Materials vary in shape, size, flow ability and bulk density, each material can look very similar, but behave totally different. It is therefore critical to establish how the material will behave whilst being handled, both during discharge on to the belt and whilst being transported to prevent flushing or material movement during transfer.

## Discharge zone

Where the material falls onto the belt and the distance of travel to become static on the belt. If the belt is inclined it is important to establish at what point does the material become stable on the belt and does not continue to roll backward.

## Influence Zone (Z2)

The Influence zone is the area at which the belt is prepared to achieve the most effective weight measurement to take place. As this is a critical part of the exercise, the influence of poor preparation and insufficient attention to detail of the belts roller configuration will lead to the weigh span area underachieving leading and to inaccurate results and poor weight measurement.

## Weighing Span (WS)

This is the weight of material passing over the weigh scale for a given time period and at a constant speed and the point at which the weighing calculation is made. The accuracy of a beltweigher is dependent on the rate between Weight on belt (Wb) and Belt weight (Bw).

Belt Ratio  $BR = Wb \text{ kg/m} / Bw \text{ kg/m}$   
 $BR = 10$  Ideal value: the belt weight is 10% of  $W_s$

$BR = 2$  Minimum value: the belt weight is 50% of  $W_s$

To increase the belt ratio (BR), we can decrease the belt speed (S), decrease belt weight, (Bw) increase the flow rate (FR)

## Stringer Spacing

It is at this point that the belt configuration and stringer design should be considered. Stringer interval spacing should be inspected to see if the roller prior and after the scale position are in contact or providing additional lift to the belt removing the

influence across the weigh scale. The stringers, should be designed and set in position to promote maximum effect on the lead into and lead out of the weigh span zone. Too close and the belt may be removed of some of the weight across the weigh scale span area. Too far apart and the belt may be inclined to droop and cause small pockets, allowing for movement material influencing weight accuracy. Good stringer interval spacing will provide the best practice to achieving accurate weight measurement.

The accuracy of a beltweigher is dependent on: the signal of 'n' load cells of 'C' capacity.

Weighing Signal  $WS \% = Q \text{ kg} / n \times C \text{ kg}$

$WS = 20 \%$  for Trade Use OIML Class 1,  $\pm 0.5 \%$

$WS = 8 \%$  for  $\pm 2 \%$

To increase this signal we can decrease the belt speed (S), increase the Weighing Length (WL) and decrease the Load cell capacity using an Aluminium Tare

Influencing the depth of material on the belt is dependent upon the signal ('n') and capacity ('c') from the load cell in relation to the weight on the belt. The better the signal the more accurate the measurement. Selecting the right capacity for the correct measurement to ensure the cell is operating within its recommended limits and therefore producing accurate results.

There is a range of load cell types available and selecting which type of load cell to use may seem a daunting task. However once size type and mode of operation of weighing system ►





is determined then choosing the correct cell becomes straightforward. Load cells operate in two modes: the weighing vessel (or similar) either sits on one or more load cells comparison mode or hangs from one or more load cells tension mode.

Although tension applications are common and easy to set up and gravity ensures optimum load introduction, weighing vessel design and safety considerations limit the practical load cell capacity, typically 5 tonne and below.

Once mode of operation has been established, system capacity usually determines which type of cell should be used.

The majority of modern weighing systems rely on strain gauge load cell for conversion of weight or load change into usable electrical output. Modern electronics has dramatically outpaced the changes in load cell development it should not be forgotten that the overall performance of any system is still dependent on the primary transducers providing accurate weight data.

## Belt tensioning device

Good belt stringer positioning design can be enhanced and complemented by correct belt tensioning. A good auto tensioning device such as suspended weight, spring loaded belt tensioner device and drum tensioner device will ensure a constant weight is present throughout the weigh scale span area and will minimise the effect of belt bounce and result of loading and unloading of the belt across the weigh scale.

Poor tension and roller efficiency can contribute to belt slippage causing the belt to jump or shudder, leading to excess forces across the weighing scale and inaccurate measurement. Handling wet and sticky material can lead to material spillage and cause drums and rollers to become clogged with material. It is good practice to ensure correct cleaner and scrapper devices are present and working correctly to ensure the belt is clean and running efficiently. Again, poor roller alignment will cause the belt to move to one side presenting off set weight fixings that can reduce the effect of downward forces being exerted on the weigh scale structure, especially if only one load cell used.

One of the most important factors in the influence zone is the angle of the belt, creating downward forces as the weight passes over the weigh scale to maximise the weight measurement. Insufficient trough angle design of the belt can influence the accuracy of the product being weighed, typically for best results the belt trough angle is recommended to be 20 to 30 degree creating the most effective down force. Adjustable belt frames provide the most advantageous results to provide flexibility to maximise accuracy and performance.

## Detection of belt speed

The detection of the belt speed is important to the calculation, as we know that the speed of the belt influences the weighing span calculation. It is therefore important to provide a reliable and quality signal and not an ambiguous signal as a result of poor positioning or machine detection. Belt 'wheel detectors' operate at their best when used on dry products but are prone to fail when used with wet and sticky products, which can cause the wheel to slip and clog up and stick, providing inaccurate real time measurement of belt speed.

Roller measurement is good providing the rollers are away from the material spillage, are in good condition and they are operational and effective ie in contact with the belt.

By far the best method of detecting belt speed is to measure the belt speed at the tail end drum. A pulse generator and sensor attached to the drum will accurately provide the pulse signal of the number of revolutions of the drum indicating the optimum belt speed for calculation.

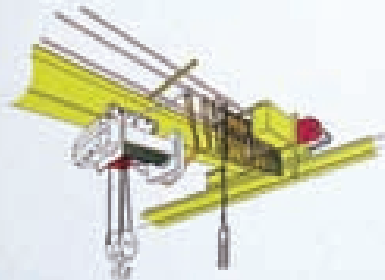
## In summary

The accuracy of a beltweigher is dependent on the care you put into the design mechanically and to the environment to which it will operate in, as well as the way it is installed at the erection stage, will all influence the accuracy you will achieve.

- Aligning the weighing plane is necessary for +/- 1 % and better
- Replacing a roller without re-alignment may occur an error up to 5 %.
- Due to the gutter shape, the trough creates a belt constraint increasing with the angle value. At 45°, reachable accuracy is +/- 2 %
- To reach +/- 0.5 %, up to 30° required (ideally 20° for Legal Trade)
- The Influence Zone Z2 must be respected and positioning of stringers to maximise performance.
- The zero calibration tests must be done daily, or at least weekly, to ensure fidelity.
- Drop tests must be done once a year and after each modification of the mechanical part of the scale as speed, idler or belt replacement.



## Overhead Cranes and Slings Safety Guide



## New Overhead Crane and Slings Safety Guide

**Mentor has published a new pocket safety guide for the safe use of overhead cranes and slinging. The 67 page booklet has been designed specifically for operators of overhead cranes and those responsible for the safe slinging of loads. This new pocket safety guide will reinforce basic training and provide a handy reminder of the key points covered on an overhead crane or lifting and signalling operator training course.**

The safety guide provides an all round reference including informative sections on the safe operation of overhead cranes, correct methods of slinging loads, the variety of lifting accessories and the recognised signals used.

All novice or experienced operators attending an overhead crane course or lifting and slinging course with Mentor will automatically receive a copy of the safety guide during their course.

The booklet can also be purchased online from the Mentor Training Materials Shop, or by contacting Mentor directly on 01246 555222.



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*Bell B30D (Mark VI version) - one of 8 B30Ds delivered to CA Blackwell last month*

## Bell launches Mark VI ADT range in UK

**Bell Equipment UK has launched the latest major upgrade to its range of D-Series Articulated Dump Trucks (ADTs). The Mark VI upgrades focus largely on health and safety, electronic enhancements and machine security.**

Key upgrades include: keyless start to protect machines from theft. A new generation Fleetm@tic fleet management system provides industry's first pole-to-pole satellite coverage. The standard version of Fleetm@tic (Standard version) now provided as standard on all machines.

Fleetm@tic manager Philip Nel said benefits of the new system included the introduction of a unique driver identification enabling customers to create an individual ID for each driver. The ID will be recorded and appear on Fleetm@tic reports with a driver scoring rate to assist customers in identifying drivers who may need more training.

Other changes include shift reports, as customers now have an option of up to three shift reports, starting at customer-selected time intervals.

Nel added: *"For customers in the rental sector there are time bar reports to indicate when a machine has been working."*

Customers are also able to use Fleetm@tic to create a virtual 'geofence' around a machine, thereby limiting it to operate only in a specific geographic area with the option of limiting the machine's speed should the machine travel outside its set boundaries.

Fleetm@tic will also send notification to the customer and their nearest service centre when a service is due to ensure that scheduled maintenance takes place to increase the machine's availability.

The Fleetm@tic machine status check sends fault codes on a daily basis and also provides an automatic oil life report.

Cabin refinements on the Mk VI include reduced noise levels due to new hydraulic damper and enhanced cab insulation, while there are also improved driver controls with fully sealed-switch module and automatic park brake selection when in neutral.

In a first for Bell, an inclinometer has been added to measure the angle of the machine and cross-references with Bell's on-board weighing system to improve driver safety.

Neville Paynter, managing director of Bell Equipment UK, said: *"This upgrade represents a significant step forward in terms of ADT technology.... launching the Mark VI machines in the current economic climate speaks volumes about Bell's commitment to improving the safety, reliability and efficiency that consistently provides our customers with the lowest cost-per-tonne production ADTs in the business."*

The Mark VI range is expected to be Bell's final D-Series upgrade before it launches a new E-Series range in the next few years.



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*Bell B30D (Mark VI version) - one of 8 B30Ds delivered to CA Blackwell last month*

## Energy from waste

Whenever RDF is prepared in one facility for burning at another, a key commercial consideration is the transportation and storage costs of the RDF. Macpresse baling equipment, from RCP Macpress, is suitable for baling such material. The company's range of fully automatic continuous bailing presses are designed for processing municipal solid waste, refuse derived fuel commercial waste and recyclable materials.



Macpresse have a heavily constructed frame designed for the harsh environment found in MSW and commercial waste operations and the elevated structure of baling equipment designed for RDF keeps debris away from the tying mechanism, making cleaning easier. Easily replaceable liners manufactured from special steel alloy reduce general wear and protect the baler from chemical attack by contaminated liquids (leachate). Leachate released during the compaction cycle can be collected for onward further processing. The electro-mechanical, horizontal, wire-tying system can operate with either traditional steel wire or the latest RDF friendly plastic wire and the finished bale size has been optimised for loading in export containers and lorries. Intelligent hydraulics and control systems ensure the entire baling operation is carried out as efficiently as possible with minimal operator intervention.



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## New industrial downdraught filter bench

### Flextraction has launched

**FB70011**, a new downdraught filter bench to control airborne particles from applications such as sanding, de-burring, finishing, fettling as well as ingredient weighing in the food and agricultural industry plus other dust forming applications, thereby improve the working environment and helping to eliminate potential respiratory health problems for employees.

The FB70011 downdraught bench complies with HSG258 legislation for the control of airborne contaminants at work. It also includes a motor fault warning light, three-sided enclosure, levelling feet and an on/off push button control with a 'power on' light. It measures 1200 mm high, 1060 mm wide and 740 mm deep and it weighs 180 kg. It is also mobile having swivel and brake casters.



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## Clean machines

The Clean Diesel System (CDS) and the Clean Machine have been developed by one of Europe's premier workshop equipment specialists, in conjunction with the Netherlands based Bark Verpakkingen BV, to address the issue of contaminated bio-diesel. The presence of water in bio-diesel fuel accelerates the formation of acids and bacteria creating a micro organism infection which, with pump and common-rail style injection systems can cause severe damage and subsequent high repair costs.



Two systems, similar concepts, the Clean Diesel System and The Clean Machine provide an environment friendly solution for cleaning polluted bio-diesel oil and associated storage tanks, automatically cleaning the bio-diesel fuel of bacteria, sludge, water, and other pollution ensuring that the fuel is clean and ready for use.

The compactness of the CDS enables a fixed tank location to be specified, alternatively, it can be customised for installation into a site control room or control station, whereas the mobile Clean Machine provides the flexibility required for cleaning, bus and truck fuel tanks, site generators or even marine located tank installations.

The two units share the key functions of an efficient recirculation process, where fuel is drawn from the bottom of the tank, is cleaned by a series of centrifugal, mixing and straining actions and is returned to the tank ensuring the fuel is monitored and of an optimal quality. Set out below are the operational features of the bypass cleaning system used in both models:

Fuel is drawn from the bottom of the storage tank and fed to the circulation system.

Water, bacterial residue and miscellaneous minutia are separated from the fuel by centrifugal action.

The separated water and solid residues are directed to the collection bowl.

To ensure the system is free of water the fuel is then passed through a 30 µ filter.

In the "CDS" model clean fuel is returned to the tank through the top, creating a beneficial mixing effect on the fuel.

Similarly, with the "Clean Machine", fuel is returned through the top, however, the removal of bacterial growth is facilitated by the use of product return lance, complete with a high pressure, rotating nozzle, which removes pollutant build up, encouraging it to be recirculated with fuel until the complete system and the fuel is clean.

The control function of both systems includes an on, off, timer and automatic system protection with indication, which engages in the event of a filter becoming blocked or there is requirement for water to be drained away. The controls also allows automatic start up following on from the auto stop function.

### The Result

Removal of the water ensures the tank environment precludes bacterial growth.

The 'moving fuel' effect of the recirculation system also ensures that bacteria cannot settle. Removing the bacterial bio-mass and other pollutants removes the live content. Filtering the product at 30 µ provides an even cleaner fuel. The programmable facility to continually agitate will discourage fuel quality fall off due to ageing.

The Clean Machine has a throughput of 2300 litres/hour while the CDS offers throughput options of 2300 & 7800 litres/hour. The systems removes 99% of free water and residues within the fuel, have a water level alarm and among other benefits prevent expensive repairs to engine injection systems, decrease filter replacement costs. In addition they are fitted with a service requirement alarm.

Bark Verpakkingen, European supplier of slimline AdBlue cabinets and systems, will be marketing the full range of the Bio-Diesel Cleaning Systems and associated spares in the UK and Ireland, through a distributor network.



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## Quadruples dust suppression area

With the introduction of a 180° oscillation option on its two largest designs, effectively quadrupling the coverage area of each machine, Dust Control Technology is now able to deliver effective particle control over more than 80,000 square feet of area from a single location with its flagship model, the DustBoss DB-60. This allows users to cover nearly two full acres with a powerful dust-trapping mist.



"These new options mean that customers can suppress dust and odour particles over a far greater area without having to move the equipment," commented DCT president Edwin Peterson. "That contributes to even greater payback, either by reducing the number of machines needed for a given job or avoiding the need to relocate the DustBoss to cover additional areas."

When equipped with the expanded oscillation option, the revised designs require that engineers change to a centre water feed to accommodate the increased range of motion. They also install a larger motor on the DB-60 or its cousin, the DustBoss DB-45, to handle the additional work. The machines will have four different settings, and users can select from 45, 90, 135 or 180° options to suit the specific job requirements on any given day.

The DB-60 employs a series of 30 specially-designed brass nozzles to atomise water into droplets 50-200 microns in size, the optimum for effective particle attraction. Launched by a powerful 25 HP motor that generates 850 m³/minute, the atomised spray has a throw of more than 60 m, yet the carriage-mounted device is completely portable, allowing it to be located wherever it's needed most. The unit has an adjustable throw angle from 0-50° elevation. An optional 7.5 KW booster pump elevates water pressure in the DB-60 as high as 200 psi for outstanding particle suppression.

The oscillating DB-45 can deliver a virtual dust barrier that covers more than 3,716 square meters, with a throw of nearly half a football field. With its 15 HP (11.2 Kw) fan, the DB-45 generates 510 CMM of airflow to maximise coverage and particle capture.

Like the more powerful DB-60, the design also features adjustable elevation from 0-50°.



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The DustBoss® DB-60 is one of two models now available with optional 180° oscillation, able to cover more than 80,000 square feet with a powerful dust-trapping mist.

## Custom engineered valves offer improved abrasion resistance

**Linatex has launched its newly-designed and re-engineered Valve Product Range, which combines custom-engineering with the superior abrasion resistance of Linatex rubber.**

Jim Geyer, Linatex global valve product manager said: "A lot of work has gone into our offering to ensure that Linatex valves meet industry needs across a wide range of applications. In fact Linatex now have the most comprehensive valve range on the market."

Globally, Linatex has specialised in the design of process equipment that utilises the characteristics of Linatex Premium Rubber. The valves are lined in Linatex abrasion and wear resistant rubber as standard, and are particularly suitable for handling abrasive or corrosive liquids and solids.



Typical 100mm closed body

Bruce Cooke, general manager Linatex Europe, added: "Utilising Linatex Premium Rubber as standard in Linatex Valve liners, ensures a genuine performance point of difference. Linatex have moulded liners with proven superior wear, that for the customer, results in longer life and lower replacement costs."

Designed and customised to meet the demands of tough minerals processing applications, the Linatex Valve Range offers a choice of heavy-duty steel operating mechanisms and robust steel, iron or aluminum bodies. Suitable for flow control in grinding and milling circuits, isolation and control in hydrocyclones and separation equipment, slurry and chemical additive control as well as specialised process applications, Linatex Valves can also be supplied with complete automation packages. The Linatex family of valves includes: Pinch valves – Open Body; Pinch valves – Closed Body Knife Gate Valves; Check Valve – Single Non Return; Check Valve – Double Non Return; Pneumatic Split Liner Pinch Valve and Pneumatic Single Piece Pinch Valves. They are available with a variety of natural and synthetic rubber liners for use in most process conditions.

Linatex has long been recognised for its use of premium natural rubber for abrasion, impact and corrosion resistance. During the Valve Range's launch Jim Geyer commented on how Linatex is realising the applications outside its normal processing arena. "The objective was to produce a highly competitive family of products to suit a range of applications; we want to have the widest range of rubber valves in the industry and we think we've achieved this."

Corrosive and abrasive bulk handling, quarry and recycling applications will benefit from the use of the rubber-lined valves, where metal units can be damaged by the ingress of material. "Rubber linings significantly enhance the life of products," added Jim. According to Linatex, this gives the lowest total cost of ownership for the higher priced valves as the durability offered by the valves can lead to four times the service life.



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# Quick hitch switch

**Plant hire company L. Lynch Plant Hire has marked its switch to new generation dual pin capture quick hitches by calling on other construction industry personnel to help improve site and equipment safety - and prevent serious injuries and fatalities.**

Lynch, with headquarters based in Stanmore, Middlesex, is holding a series of Quick Hitch Safety Road Shows to highlight the benefits of its new hitches and to address safe on-site working practices - particularly when using different types of quick couplers - with all appropriate staff including both equipment users and non-operator personnel.

The company is currently investing around £1.4m in replacing the fully automatic hitches on its entire 500-strong excavator fleet with industry-leading Auto-Loc 3 dual pin capture quick hitches manufactured by Ireland-based Hill Engineering, through Hill's 'new for old' exchange scheme, and will complete the upgrade by February 2010.

Hill is also supporting Lynch in the road shows to explain how the technology in its fully automatic Auto-Loc 3 model works, by not only doing away with the need to manually insert a locking pin, as with semi-automatic hitches, but also providing fully independent locking.

This means that if the operator fails to connect the attachment properly with the back pin, the front pin will remain securely locked in place, ensuring that the attachment does not accidentally become detached.

Lynch Plant Hire director Rob Lynch has already hosted around a dozen road shows on sites operated by major contractors such as Skanska, Bam Nuttall and Balfour Beatty.

He said that not only was there interest in how the automatic dual pin capture hitches work, but participants were also extremely keen to find out how they can help to reduce site and equipment accidents.

He said: "Automatic dual pin capture hitches are the single-most important progression in quick hitch safety because they ensure that both pins are totally secure, which all but eliminates the chance of unintentional bucket or attachment separation.

"However, they are not an absolute solution because, as always, there still remains the potential for human error, either from the machine operators themselves or somebody outside the cab getting too close to working equipment.

"Safety on site is everyone's responsibility, so it was clear to us that while Lynch can certainly play its part by continually upgrading our equipment and operator training to the very highest possible industry standard, we should work closely with contractors and on-site personnel to help establish correct and safe operating practices."

The Lynch Quick Hitch Safety Road Show takes a three-pronged approach, by outlining the correct procedures for safe hitch usage, establishing the need

for proper and responsible hitch maintenance and determining the correct management and performance of people in and around the excavator.

The issue of quick hitch safety still remains high on the industry agenda following a spate of injuries and deaths over the last few years due to buckets becoming accidentally detached and striking workers - a problem generally attributed to incorrect operator use.

In a bid to improve site safety, a number of major contractors, such as Skanska, have already banned all non-dual pin capture hitches. This exceeds the agreement between the Health & Safety Executive (HSE) and the main European quick hitch manufacturers, which means that new semi-automatic hitches will no longer be supplied to the UK market.

Lynch operates an excavator fleet comprising of one-tonne to 45-tonne machines from Volvo and Komatsu and has an unblemished safety record stretching back 30 years. It provides its operators with extra quick hitch training, even beyond that already undertaken as a matter of course by Hill, as well as carrying out special training for outside contractors using its machines.

All qualified Lynch operators are issued with a Lynch Quick Hitch Competence card, which they carry alongside their Construction Plant Competence Scheme (CPCS) card for inspection on site. L. Lynch Plant Hire was established in 1980 and has since grown to become one of the leading names in the UK plant hire industry. With three main depots across the UK, its machines are currently in use on major highways, rail and utility projects.

Rob Lynch said: "The events held so far have been extremely successful in spreading the site safety message, as well as helping us to further evolve our quick hitch operating and safety procedures using the feedback we continue to receive.

"We are extremely proud of our excellent safety record, which is a legacy of always insisting on proper in-depth training, together with a continuing investment in any measures that will help prevent accidents and save lives.

"This is why we have chosen to replace all our existing hitches with Hill's dual pin capture automatic models. Not only are they fully tried and tested products, but

Hill has provided us with a first-class service - nothing has been too much trouble for them."

Not only does the Hill Auto-Loc 3 automatic hitch ensure that there is no need for an operator to leave the cab to change attachments, it also allows them to visually confirm from within the cab that the bucket or other attachment is securely locked in position.

It complies with all existing UK and international safety standards and legislation by ensuring attachments can only be released when the boom is in a safe working position and it is also universal, allowing the fitting of a mixed range of attachments such as hammers and rippers.

Ian Hill, managing director of Hill Engineering, said: "As a leading quick hitch, bucket and excavator attachment manufacturer, we share Lynch Plant Hire's dedication to improving safety on the UK's construction sites and so had no hesitation in participating in the road shows to ensure the proper use and maintenance of our hitches.

"A strong commitment to improve quick hitch safety has developed within the industry, particularly after a number of high profile incidents over the past few years in which failure to properly use traditional models has, in some cases, resulted in serious injuries and fatalities.

"At Hill Engineering safety has always been an overriding priority, which is why we developed the Auto-Loc range of quick couplers incorporating dual pin capture technology back in 2005. With the proven track record of safety and reliability, we believe the Auto-Loc range to be the safest and best-engineered quick hitch on the market today.

"We very much welcome an initiative such as the Lynch Quick Hitch Road Show, which sends out the message that by using the best and most up-to-date equipment technology, combined with comprehensive training and the implementation of correct on-site safety procedures, there is no longer any need for lives to be put at risk."





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# 3 in a row for Arthurs Waste Management .....

Arthurs Skips Ltd has added to their previous purchase of the Powerscreen shredder 12 months ago by taking delivery of 2 new machines from local dealer Powerscreen Pegson Equipment. The first is a new 2 way split Powerscreen Warrior and the other a Powerscreen Metrotrak. The new equipment has been primarily bought for the processing and recycling of Skip & C & D waste. The company decided it was time to move forward due to the constant changes in waste handling and treatment. Arthur's Skips is continually looking for ways to increase and improve their levels of recycling.

The 2 Way Warrior is the first one of its type working on waste, it has been adapted so that all of the mid and oversize products enter the picking station via the same belt. It also has an over-band magnet mounted on the waste material. The 1400 2-way Warrior is a high capacity, heavy duty, versatile machine capable of dry screening & separating a wide variety of material in the most difficult and demanding of applications; particularly recycling, aggregates, compost, topsoil, coal, C & D and skip waste.

Warriors can accept material feed of up to 24" (600mm). The Powerscreen Metrotrak is a small but aggressive crusher giving high output even at tight settings. It comes complete with dirt conveyor and magnet separator. It can be easily moved onto site and set-up quickly to achieve crushing capacities of up to 160 tph.

Arthur Skips is one of the largest skip companies in the Sheffield area, James Hartley-Managing Director, stated, "that he wanted to team up with Powerscreen Pegson Equipment again as he was very impressed with their experience combined with their parts and service backup." He also commented, "That Powerscreen Pegson Equipment are willing to not only supply a machine but also work closely to develop your company, backing you up with an excellent service department. Nothing's too much to ask of Powerscreen Pegson Equipment always willing to do their best in difficult times." In a nut shell Powerscreen Pegson Equipment is a quality company delivering a quality product.

The site is now populated with a shredder, crusher, tracked screen and a picking station all supplied by Powerscreen Pegson Equipment.



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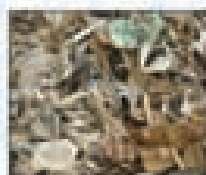


## REDOX turns your waste into profit

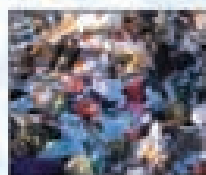
### sorting line solutions



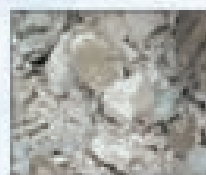
construction waste



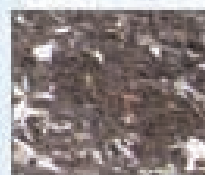
industrial waste



municipal solid waste



gypsum



compost cleaning



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## Staffordshire County Council adds two new Sennebogen 305 Multihandlers to their fleet.

**Staffordshire County Council (SCC) have recently purchased two new Sennebogen 305 Multihandlers from the Sennebogen UK and Ireland distributor Hassells of Stoke-on-Trent for handling duties at their Stafford and Cannock waste recycling centres.**

Having previously purchased a Sennebogen 305 Multihandler from Hassells for their operation in Stone, Staffordshire the decision to add another two versatile and robust machines endorsed Sennebogen as supplier of choice for its requirements.

Weighing in at 11 tonnes the Sennebogen is of strong build quality and offers increased durability and component life expectancy. Operating on foam filled tyres the Sennebogen 305 features a two section telescopic boom as standard equipment and is hydraulically extendable from 4.1 to 6.6 metres.

Featuring a hydraulic quick change device operated from the driver's cabin a 2.5 cubic metre the two machines are fitted with a hook lift mechanism enabling easy and efficient handling of the waste bins at both sites. Both machines have also been 'beefed up' by Hassells and have the option of a compaction framework attachment to allow compaction of the waste in the bins. Hassells also supplied a set of fork lifts with each machine which has added a third option to the machine handling for Staffordshire CC.

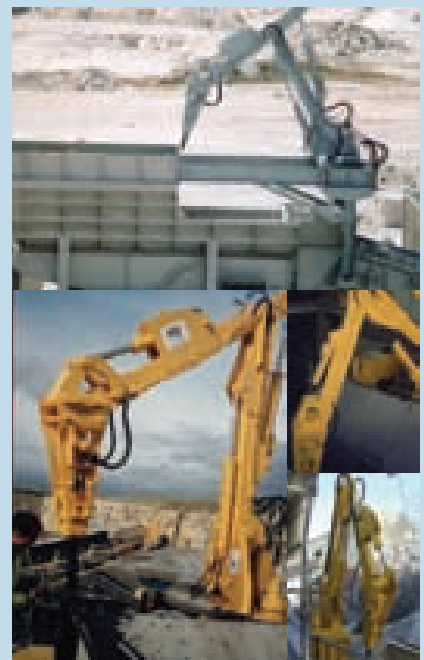
The Sennebogen 305 also features a hydraulically elevated cabin and 3 position steering which provides the SCC operators with improved vision, exceptional maneuverability and excellent all round vision when loading high sided vehicles or containers.

Excellent service accessibility and extended maintenance intervals also offer reduced maintenance costs on the 305 machines.

Fred Marsden - SCC Waste Facilities Manager, commented, "The versatility of these machines allows them to carry out many different tasks around the site one of which is the manoeuvring of the containers thereby reducing the demand on other service vehicles. It is also anticipated that the Sennobogen machines will assist in the operation of the new small trade waste schemes that are due to be opened at the Stafford and Cannock sites."



[www.hub-4.com/directory/1788](http://www.hub-4.com/directory/1788)



## PRF Rockbreaker Boom Systems

**PRF ENGINEERING** was established in 1987 to design, develop and manufacture special purpose equipment, originally for the quarrying and mining industries.

One of the main products to evolve has been Rockbreaker Boom systems, "Peckers" for use in secondary breaking of rock in various types of crushing plants.

The problem of oversize material blocking primary crushers is very common and PRF has gained wide experience in the design of different types of Boom Systems to combat the problem.

Attention to detail and robustness of design are the essential features required to provide a unit capable of performing reliably in these very tough applications.

The philosophy has been to produce systems tailored to suit individual crushing plants, an approach designed to deliver a targeted solution to the specific problems of each installation.

This means that PRF do not offer a standard range of Booms, in terms of reach and geometry, but are able to produce customized proposals based on a brief site visit, or on general details and requirements supplied.

Boom systems are produced to suit all types of fixed and mobile crushing plants. All are equipped with 360 degree slew and joystick remote control, allowing operation from any distance using television monitor.

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# The universal weapon for natural stone and recycling applications

**Raw material is limited - that's a fact. So recycling and demolition has become even more important than it ever has been.**

One of the most important questions is: What to do with the construction & demolition waste on the site? Disposal of the material on a landfill site causes freight, dumping and aggregate costs. Disposal of the material elsewhere attacks the environment and will be strictly regulated everywhere in the world in the future.

The most obvious choice offering many advantages is - crushing directly on site in the city centres. CITYEQUIP has developed a mobile and quality concept for these applications. Intelligent, but simple and powerful products which avoid extra costs for demolition contractors, farmers, earth moving companies, ground workers, container services, shipping agents, rental companies and even landscape gardeners with small space.

The popular jaw crushing range relies on the single toggle jaw crushing products CitySkid and CityTrak with its crusher opening of 700x500. For higher capacity or/and a particular product, the users have the possibility to choose between the same framed 920x250 or the 900x600 crusher on skid. Our Scandinavian entrepreneurs have proved the robustness and flexibility of CITYEQUIP products by operating in natural aggregate applications. So whether Scandinavian hard rock or Portuguese demolition recycling CITYEQUIP provides the suitable product.

Due to its compact design, the track mobile CityTrak 7T6 can be transported on a flat bed trailer without any extra permission. The same applies to the CitySkid 7V3 and 7V4, which offers additional container mobility by using hook lift trucks for carriage.

Each of these units allows a safe and simple set-up because the robust chassis remains fixed in working and in transport position as well. The simple reason behind it is that CITYEQUIP excludes any complicated hydraulics on its equipment. Problems with valves, pumps and pipes belong to the past and service is easy.

Furthermore, the problematic iron discharge doesn't cause any trouble, because the moving jaw and the discharge belt run in the same direction. Also, the transparent and operator-friendly design ensures a good access to any urban locations.

## Convert waste into profit

Contamination? Manual sorting is exhausting and expensive.

Convert the waste into profit! Meet the latest law regulations and save the environment.

The most effective mobile concept for added value and quality improvement reads as follows: The unique container mobile AirMaster, the track mobile AirCrawler and the skid mobile AirBasic by CITYEQUIP.

When lights are to be separated from heavy or heavy from lights, the patented drum system can achieve a purity of up to 99% of the target product. The environmental impact during operation is very low due to its closed circuit system and the low emissions. At the same time, the principle "take care of your employee" is followed which protects the operator. This successful system is based on more than 25 years of experience in the air separation business. The accurate configuration possibilities of this matchless air separator allow efficiency and adjustment without any limits. By this, one originally problematic product can be separated into at least, two profitable products. And this does not only apply to construction & demolition jobs; bio energy production, compost processing, glass and waste sorting are further examples about the various possibilities of applications for this equipment. Any landfill costs are relegated to the past



with immediate effect. When producing aggregate or processing in wood operations, eliminating the contamination improves the quality enormously. At this stage, metals, whether desired or undesired, become increasingly recognised as a potential yield. In the present day they are very valuable raw materials, thus, the recovery of raw material, like metal in slag processing, provides a profitable return for any related entrepreneur.

The high performance CitySort Series offers container mobile solutions to remove ferrous and non-ferrous metals. The Fe-Series uses special magnets in order to discharge the ferrous metals length or crosswise. The Ne-Series includes the effective eddy current separator for the reject of non-ferrous metals and the discharge of residue ferrous elements via magnetic drum. This product is split into the 1000 and 1500 size classes depending upon the level of performance required. On-board collection conveyor belts transport the sorted fractions for further use.

As flexibility is one of the required characteristics today, CITYEQUIP provides the "ANA"-drive concept for all of its machines. "ANA" stands for autarkic / non-autarkic. This system provides the quick and simple setup of each unit and offers the choice between using diesel electric or all-electric power, depending on the operator's selection and the availability of power at the site.

The optional John Deere diesel engine can be mounted directly on the existing chassis without causing dimensional problems. It ensures less consumption and trouble-free work. In conclusion, CITYEQUIP machines are adaptable to each situation and allow saving costs in investment and in operation.

Generally, this product range has already been established in the European market. Day by day, it proves that it stands for robustness, compactness, simplicity, reliability, high efficiency and high capacity. Even in hard times, the intelligent solution for market niches by CITYEQUIP has shown that it supports any entrepreneurs to maintain or even grow their business.



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# Equipment for the Recycling Industry



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# Mobile Material Handling Solutions!

Telestack Limited continue to be at the forefront of innovative engineering throughout the globe, with the emphasis on providing mobile solutions to the wide customer base with a complete range of equipment to meet the needs of any application. Telestack have extended their wide range of equipment, with the design and manufacture of an array of tracked stockpiling conveyors. The tracked stockpiling conveyors range from 200TPH up to 600TPH+, lengths from 15 metres (50ft) to 24 metres (80ft) and materials from 0-2mm sand to 0-250mm stone/aggregate, which ensures the range can suit all applications and budgets.

Unlike other manufacturers, Telestack have been designing and manufacturing mobile material handling equipment for many years. This has been key to the success of this current range, as the design has been perfected to reflect the ever changing needs of the customer and the range of applications. This ensures that the products are proven within the field and have been developed on first-hand feedback from site operatives and site managers. Since the implementation of the tracked crushers and screeners within the quarry market, the natural progression would be to include a tracked stockpiling conveyor within this operation, which offers a complete mobile system and offers unrivalled flexibility and cost savings for the operator.

A key benefit for these tracked stockpiling conveyors is that they ensure the elimination / reduction of a wheel loader on site. The conveyors can be fed from the primary crusher/screener and stockpile the material up to heights of 11 metres and a conical capacity of up to 3,500 tonnes (based on Bulk density 1.6t/m<sup>3</sup>). This eliminates the use of a dedicated wheel loader for moving the material from the crushing/screening operation. Depending on the specific operation, the wheel loader can be used for other tasks on site during this period, which will greatly reduce the operator costs and fuel consumption.

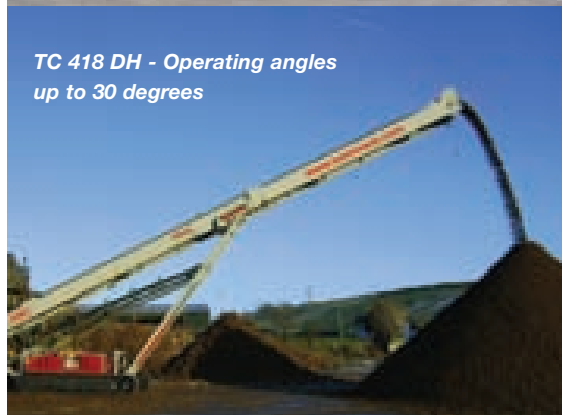
Typically, crushing and screening operations would stockpile with the wheel loader, however, it is clear that this offers more problems on site. The processed material becomes compacted and contaminated, as the wheel loader drives up and down the stockpile (as shown in picture above) This greatly affects the grade of the material and the material can become very dense and difficult to move when



*Tracked Stockpiling conveyor fed from Powerscreen Warrior 1400*



*Typical Stockpile with Wheel loader leads to compaction and contamination*



*TC 418 DH - Operating angles up to 30 degrees*

required. Also, there are health and safety issues when driving the wheeled loader up and down the stockpile, with risk of possibly injuries for operators and damage of equipment on site. Using a Telestack reduces the noise and dust emissions on site which are key environmental issues. The tracked conveyor reduces these issues significantly and ensures an efficient and reliable alternative to the much higher costs (Labour, Fuel, Maintenance etc) of a standard wheel loader.

In terms of transportation of the units, they can be easily tracked on-off a flat bed low loader for 'site to site' transport, which ensures that they can be used on a variety of sites at a minimum cost. As with all of Telestack products, these units can also be containerized, which greatly reduces transport costs if being sent around the globe. Also, the robust design and stability of these units ensure that they

can be easily tracked around the site in any conditions, which minimal set up time required.

As with many of Telestack's units, the tracked stockpiling conveyors can be customized to meet the needs of any application with optional extra's including, dual power, all electric, radio remote control, impact protection liners, extended feed-boot, hydraulic folding tail section (for ease of transport) and many more.

Telestack, with their UK representative Blue Group, are continuing to promote these products as an alternative to the higher cost wheel loader which is primarily used on sites at the moment. There are guaranteed savings on using these tracked conveyors when in comparison with a wheel loader.

If you require any further on this range of products, please contact Telestack Limited - [info@telestack.com](mailto:info@telestack.com) or [www.telestack.com](http://www.telestack.com). Or if in the mainland UK - Contact Blue Group [sales@bluegroup.com](mailto:sales@bluegroup.com) or [www.bluegroup.com](http://www.bluegroup.com).



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**Telestack will be attending the Bauma 2010 Exhibition on Stand No. N821/1 from the 19th - 25th April.**

**Telestack and Blue will be attending the Hillhead 2010 Exhibition from the 22nd - 24th June**



Portable Unit for Quarries  
ASTC

## Mobile Heavy Duty Vacuum Cleaning and Bulk Collection

**Designed and manufactured with mobility and performance in mind, Ecogam Industrial Vacuum Units provide end users with high power, maintenance free removal of dust and debris. Now available in the UK & Ireland through JEC Vac Solutions Ltd.**

The Portable Vacuum Unit for Quarries (ASTC) has been developed to meet the needs of this specific sector, collecting dust, small stones and debris up to 90mm diameter.

The ASTC Unit offers superior suction power in comparison to other brands of a similar size to improve the bulk recovery of dust and debris in production areas: mills, elevator pits, conveyor transfer points, silos etc.

Easily transported using a fork lift, power shovel or mechanical loader, the self contained ASTC Unit with its onboard compressor for reverse jet cleaning of the large area filter medium, only requires plugging into a power point to become operational. The large capacity cone shaped hopper is fitted with a butterfly valve for fast discharge or can be fitted with a rotary valve for continuous operation and increased productivity.

In addition to the ASTC, trailer and lorry mounted high performance units are available. These units are also self contained utilising PTO for Vacuum Pump drive, onboard compressor for reverse jet cleaning and hydraulics for hopper tipping for discharge of collected materials.

Ideal for smaller duty applications, the Aspicompact Industrial Vacuum Cleaner range provides guaranteed high performance with minimal maintenance. The compact design ensures the units can be moved manually or by fork truck to clean anywhere on the site. The large area filter cartridges and reverse jet cleaning allows for continuous cleaning operations over long periods of time even when collecting fine dusts such as cement, plaster and lime. Available with optional support frame for discharging into big bags or containers and with rotary valve for continuous discharge and increased productivity.

In addition to the Heavy Duty Ecogam Range, JEC Vac Solutions Ltd. also design and supply Central Vacuum Cleaning Systems and vacuum or positive pressure pneumatic conveying systems.

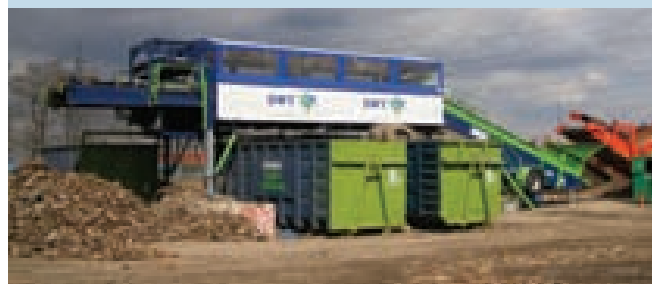
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## Flexible Waste Separation suited to meet your needs!

**Smulders Waste Technology B.V. can offer two versions of their Fully Mobile Picking Stations, with options of 2 and 3 bay units, which are available for sale or hire.**



SWT Mobile Picking Stations have been designed to be easily set-up and operational, providing an efficient platform to enable the safe separation of products from within your waste stream.

A Large feed hopper with Impact bars positioned underneath ensures that a variety of waste types can be handled efficiently using either a conveyor or machine feed method.

The main conveyor is 1200mm wide and driven by a variable speed hydraulic motor enabling you to control the depth of material flow past the operators. The incline section is high-sided to reduce material spillage while the horizontal section runs on a low-friction surface enabling safe removal of products by the operators.

The conveyor is driven by a diesel/hydraulic powerpack enclosed in a silent-pack canopy design to minimise the impact of noise while being operated.

Access is provided by heavy-duty retractable steps each side of the conveyor leading to solid floor walkways enabling a safe and comfortable platform for the operators to work from. Each of the picking stations comprises a drop chute with a large opening and a pull wire emergency-stop system above the conveyor belt. The picking section is enclosed by a canvas canopy stretched over a steel framework to provide protection from the weather.

The design enables up to three 35-yard skips to be positioned underneath with the final product falling off the end of the conveyor. The Picking Station is supported on heavy-duty legs while in its operational position with the front legs hydraulically adjustable. There is the facility to incorporate an overband type magnet to remove ferrous metals on the discharge end of the machine.

For further information please contact us on 07703066111 or [info@wastetechnology.co.uk](mailto:info@wastetechnology.co.uk)



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# The Windshifter....

**Dutch specialist REDOX Recycling Technology design, manufacture and install robust, well-engineered and practical recycling plants around the world. Each plant relies on a combination of techniques and one of the key machines is The Windshifter.**

The Windshifter uses blown air as a density separation device and the key to its success is the versatility to adjust to suit many different wastestreams and applications.

Density separation is an important step in the waste recycling process to achieve parity in the recyclimate (a term given to each sorted 'product' from the mixed input).

The wastestream to be separated is brought onto a vibrating table within the Windshifter. By vibrating, the materials spread out and long parts are carried along in the flow direction. At the end of the vibrating table the material falls as a 'curtain' through a blown air stream. The light parts are lifted across a rotating drum and collected below a hood. The heavy parts fall in front of the drum and are discharged via conveyor. Even long parts can be separated effectively with relatively low air flows since the rotating drum can take these long parts out by mechanical force. Airflow in the hood is recirculated back to the fan for energy efficiency and there is dust management incorporated.

The Windshifter parameters can be adjusted by variable speed air flow, angle of airflow, speed of separation drum, height and distance of drum to the vibrating table. By controlling these items the dynamics of the Windshifter can be changed to suit different separation techniques. Energy is of paramount importance, these machines can use only 25% of the power requirement of suction/cyclone systems.

Common separations are:-

For Construction and Demolition Waste, light parts like wood, folio, paper, cardboard and plastics from aggregates. Further process could be heavy wood from light contamination and high calorific fractions;

For Commercial Wastes, wood from paper and solid recovered fuels, hard plastics from light debris;

For MSW, light waste from organics, plastics from cardboard, paper from cardboard, glass from plastics and paper;

For Compost, stones and debris from the oversize, paper and plastic foils from the organic fraction;

Other applications are cleaning of incinerator bottom ash, co-mingled waste and even grizzly abattoir waste to recover butcher's tools!



The Windshifter works best within a narrow fraction range for example, 12-25mm, 25-60mm, 60-150mm, 150-300mm and 300+. Therefore you can see how the recycling plant works with size sorting combined with windshifting to achieve optimum performance. A typical full plant can have 5 windshifters built in.

The Windshifter is available as a stand alone machine also. It can be a fixed installation, semi-mobile on a hook-lift frame or even fully mobile on self-powered tracks. It can be open or enclosed and can also be placed at the end of a conveyor belt. Different sizes are available for a range of duty and throughputs.

REDOX manufacture each machine specifically for each customer therefore is tailor-made in a very impressive modern and efficient factory.

Exclusive UK Sales Manager Simon Ingleby states, "REDOX marketing strategy obviously still involves the big turnkey plants however, they are very keen to incorporate this technology into existing installations and with the new mobile tracked unit this could be a key machine for hire fleets and site demolition works"



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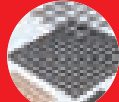
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