NOVEMBER 2010
HUB™

WASHING PLANT FOCUS

Revolutionising mobile washing equipment

At the launch of the new M2500 mobile washing plant during the Bauma exhibition in Munich earlier this year CDE Global promised to deliver a revolutionary product to the mobile washing equipment market.

The success of the M2500 to date suggests this revolution is well underway with installations in many countries including Ireland, UK, Germany, Poland, Australia, Turkey and Lebanon.

"The success we have had throughout the world with the M2500 confirms the belief we had that it represents an entirely new approach to mobile washing" says CDE Marketing Manager, Peter Craven.

The M2500 integrates a feed system, aggregate washing, sand washing and stockpiling system on a compact, easily transportable chassis and is available in a variety of configurations. There are 4 models available in the range allowing for the production of 2 aggregates and up to 2 washed sand products.

According to CDE the integration of the sand washing element on the M2500 has been key to its success. *"The existing mobile washing plant offering required a separate aggregate washing and sand washing system which caused a lot of problems for operators in relation to the efficient transfer of material from one stage of processing to another"* explains Sean Kerr, Senior Design Engineer on the M2500. *"We have eliminated this issue and ensured that operators can now choose a complete sand and aggregate washing plant with a dramatically reduced plant footprint."*

The integrated Prograde P2-75 screen on the M2500 also offers operators improved aggregate washing when compared to the previously existing mobile washing plant offering according to CDE. *"The Prograde screen is designed with washing in mind" says Sean Kerr. "This is in contrast to other rinsing screens which are all too often dry screens with the crude addition of a few spray bars."*

The Prograde screen is designed to ensure maximum performance in relation to the washing of aggregates while also considering ease of access for replacement of screen media and modifications to the washing system. The double deck Prograde screen measures 5m x 1.5m and operators can choose the screed media to suit their specific application. The design of the screen allows for wire mesh, rubber or polyurethane screen decks to be specified and should there be a requirement to change the type of media at any stage this can be done with no requirement to make any modifications to the screen. This not only ensures a degree of flexibility not available from other similar systems but minimises the time spent on maintenance ensuring maximum production from the M2500.

The M2500 has been designed for ease of transport as can be seen in the specification of the machine in Australia, Turkey and Lebanon in particular. *"The M2500 is exclusively manufactured in Northern Ireland and the success in securing installations in seven countries this year is evidence that it represents an entirely new offer for those with a requirement to wash their material"* says Peter Craven.

The new system from CDE can be used in the processing of a wide range of materials including sand and gravel, crushed rock, soils, construction and demolition waste and various mineral ores. "The opportunities for further installations of the M2500 in 2011 are significant based on enquiries we already have" says Peter Craven. *"Securing the first installations in some very important markets will lead to many more as the M2500 is proved to be the most efficient mobile washing plant on the market."*

Further details on the M2500 and other products from within the CDE washing equipment portfolio can be found on their web site at **www.cdeglobal.com.**
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www.hub-4.com/directory/163

SOTRES Sand Washing and Effluent Treatment Equipment in the UK.

Finedoor Ltd is a family owned and run business which has been established for over 25 years. The business is comprised of a dynamic group of professionals with one aim - to provide bespoke quarry and recycling solutions to our customers.

With a customer base across the whole of the UK and Ireland from the major quarry groups through to the single site owner operators plus international sales in territories including Middle East, West Africa and India. The sales vary from the supply of spares through to replacement and new machines to the design, detail and supply of all necessary components for new, or upgraded plants.

In order to provide turn-key solutions Finedoor has established a portfolio of partners that has enabled them to offer a broader portfolio.

As a result of this an agreement was reached with SOTRES S.A. of France to distribute their range of sand washing and effluent treatment equipment in the UK

SOTRES Sand Plants:

SOTRES has been a specialist in washing and preparing concrete sands in quarries and pits for more than 25 years.

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 mean that they 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.

Working principle:

The water and sand are collected in the tank. The pulp which is conveyed by a centrifugal pump feeds the cyclone tangentially. The centrifugal movement inside causing liquid-solid separation.

The clay, waste and ultra-fine particles are removed by suction by the overflow. Centrifugal force makes the solids and heavy elements spiral down the cone, which are rejected onto the dewaterer.

Featuring a rising slope and fitted with two vibrating motors and slotted screens, the dewaterer track makes the sand move along its whole length.

The outlet chute collects the dry sand and dewatered undersize elements return to the tank.

Offering all possible permutations these modules can also stand completely alone to meet installation requirements, in particular for modifying existing installations. Processing requirements may result in the need for: single, double or triple stage cycloning, with or without technical separation. These specifications are determined from analyses of the products to be processed and the results to be achieved.

Current Installations:

Earlier this year Finedoor installed the first mainland SOTRES compact 80tph for Lightwater Quarries at their Potgate Quarry near Ripon. Well established, the quarry supplies a hard magnesian limestone for road construction and other applications throughout Yorkshire.

With a busy operation of this nature it was of prime importance that the processing plant operates efficiently; however it had become apparent that the existing screw/bucket dewatering unit was losing fine sand to the settling lagoons. It was therefore decided after consultation with Finedoor that it would be beneficial to replace the inefficient unit with a modern hydro cyclone sand treatment unit.

With a requirement that the new unit must recover 100% passing 150 micron Finedoor guaranteed the performance and offered a suitable unit which was available for immediate delivery from their sand processing and water treatment partner SOTRES SA in France.

Installed during a holiday period initial grading taken after a few days after commissioning reflected excellent results, with tests on the waste water indicating nothing passing 75 micron was entering the lagoons.

Capable of producing up to 80tph the SOTRES unit supplied is a compact sand plant featuring a galvanised dewatering screen unit which is supplying a single grade of sand. Finedoor also supplied a Warman pump specifically supplied 'one size up' to minimise wear. Finedoor engineers commissioned the sand plant and all the civils were provided by Lightwater engineers.

Kevin Parker - General Manager, commented, "It was clear to me that SOTRES have plenty of experience in sand plant design and their confidence in their product made the purchasing decision easy. Finedoor gave good support and ensured the plant would slot into place in the short shutdown period and despite the bitter weather everything went to plan."

STOP PRESS:

Finedoor has just installed and commissioned a SOTRES Quarry Waste Water Treatment Plant for a client in Yorkshire. Designed to eliminate the on-site lagoon the plant will effectively deal with specified rates of waste water and mud from the wash plant and is specifically designed for low maintenance and running costs.

www.hub-4.com/directory/914

T: 0113 252 7601
www.finedoor.co.uk

Trust wileman to deliver

Leicestershire-based Wileman Engineers Ltd designed, installed and commissioned the main processing plant to Hills Quarry Products' specific requirements with great success.

Erection of the low-level plant (all elements are less than 8m in height) was completed during summer 2009, with final commissioning taking place during October and November.

It is designed to wash and size the primary screened 'as dug' sand at a maximum throughput rate of 180 tonnes/h to produce, in conjunction with a Linatex sand plant, a full range of washed sands, single-size gravels and ballast materials for supply throughout Dorset and neighbouring Somerset. The plant is equipped with a PLC system, supplied by Bridges Electrical, which controls all aspects of its operation, such as feed rate and start/stop sequencing. In addition, all conveyors are fitted with rotation sensors to facilitate unmanned running.

The quarry's weighbridge and ticketing operations are conducted through a computerized system supplied by Avery Weigh-Tronix.

Recovery of material from the surge pile is achieved via a 30m long x 3m diameter Armco-type tunnel, supplied by Asset International. A rubber-lined chute in the roof of the tunnel feeds material, via a Rowecon motorized cut-off gate, on to a variable-speed belt feeder which, in turn, discharges on to a 160m long x 800mm wide troughed and part-inclined tunnel reclaim/field conveyor for delivery to the plant. The belt feeder is PLC controlled via a Siemens Acumass

belt weigher to maintain a consistent feed from the surge pile to the processing plant at the desired rate.

On arrival at the processing plant, the -50mm material is fed in to a Hewitt Robins 4.2m x 1.8m double-deck washing screen equipped with SCS polyurethane deck modules. The top deck cuts the material at 40mm while the bottom deck cuts at 5mm. Any +40mm rejects are sent, via conveyor, to a ground bay for subsequent reprocessing by a mobile crusher, while the -40mm +5mm fraction is conveyed to a Wileman 2M3 Pnu-Drive 2m diameter x 3m long contra flow scrubber barrel for attrition to release the sands and clays ahead of the final grading screen. Fresh water feed requirements to the washing section amount to approximately 1,100 gal/min.

The second and final screen is a Hewitt Robins 4.2m x 1.25m double-deck horizontal screen. Once again, both decks are fitted with SCS polyurethane modules, the top deck cutting at 20mm and the lower deck cutting at 6mm and 10mm. Any 5-6mm product is sent to a ground storage bay while the 6-10mm and 20-40mm fractions are conveyed to their respective ground stockpiles by a pair of static inclined conveyors.

The predominant 10-20mm fraction is conveyed to its ground stockpile by a radial conveyor.

All the stockpiling and transfer conveyors used within the plant are powered by Renold drives and gearboxes of varying sizes and equipped with either 800 or 600mm

wide x 500/3-ply all-nylon belts with rubber covers, supplied by RAP Conveyors. The conveyor drive shafts run in INA FAG self-aligning ball bearing plummer blocks, while the belts themselves travel on 102mm diameter three-roll, equi-length, drop-in idler sets with sealed-for-life bearings supplied by Rulmeca UK Ltd. Scraper sets from RH Conveyor Services are fitted under all head drums for belt-cleaning purposes.

Meanwhile, the sand and fines released by the washing screen and the scrubber barrel are pumped to the holding sump ahead of a Linatex compact sand plant and dewatering screen system. Some 1,150 gal/min of water and up to 100 tonnes/h of -5mm solids are pumped from the sump to the centre of a

1.22m diameter Linatex S-Type classifier. Here, the coarse fraction reports to the base of the classifier vessel and is extracted by a Linatex 200/150mm bore pump and fed to a Linatex 660 G4 hydrocyclone. This apparatus washes and thickens the product, removing -75 micron material via the overflow while the underflow discharges 'coarse' sand on to a VD15 dewatering screen, which removes the free moisture prior to stockpiling via conveyor.

Concurrently, the overflows from the S-Type classifier and the coarse hydrocyclone are directed to a collecting sump and then pumped by a 150/125mm bore pump to a Linatex 375 G4 hydrocyclone. As before, this unit washes and thickens the product and removes, via the overflow, any unwanted -75 micron silts and excess water. This time however, the underflow discharges 'fine' sand on to the VD15 for dewatering prior to stockpiling. The single dewatering screen is fitted with a dividing plate down its length, to maintain separation between the coarse and fine sands.

Silt and excess water from the sand plant is discharged to a ground sump where a Warman 150SP vertical pump delivers the liquor through 300m of 280mm diameter HDPE fused pipe work to the quarry's silt lagoons. Connected by a series of channels and with a potential silt storage capacity of 98,000m3, these allow hindered settlement of the solids and provide clean water for re-use in the washing process. The clean water pump, a 37kW Flygt electric submersible, delivers 350m3/h back to the plant via 360m of 250mm diameter HDPE fused pipe work.

The loading out and rehandling of the final sand and gravel products is carried out by a Volvo L120F wheel loader equipped with an on-board weighing system, with deliveries to customers being made by the company's franchised vehicle fleet as well as additional contract hauliers, as required. The Volvo L120F loader is also used to feed aggregate materials to Woodsford Quarry's on-site ready mixed concrete plant.

The Award winning Aggwash at work

Award Winning Powerscreen Aggwash a big hit for DUO!

The Powerscreen® Aggwash was voted the winner of the Series Innovation Category at the 2010 World Demolition Awards. The new concept is a development in mobile wash plant which unifies for the first time rinsing, screening, scrubbing and sand washing capabilities on a single transportable chassis.

Launched in June 2010, the Aggwash was previewed at the Hillhead exhibition by DUO (Europe) plc, the UK Powerscreen Washing distributor.

Award Winning Features:

Primarily designed for the processing of construction & demolition waste the Aggwash is equally suited to virgin material applications and is capable of producing 4 grades of aggregate and up to two grades of sand at up to 60 tonnes per hour. Electrically powered and delivered pre-wired, it is perfectly at home for operations in built-up areas, which are subject to noise or emission controls.

Drawing on its mobility, quick set-up time (approx. 1 day) and versatility in operation, the Aggwash is an essential tool for any small to medium sized multi-site operator, or contractors' fleet.

A key design feature of the Aggwash is its ability to offer operators the flexibility to quickly and easily re-locate a complete wash plant operation, thereby eliminating the need for machinery duplication. Additionally, the Aggwash also allows operators to work in space and emission constrained sites because of its compact size and zero exhaust emissions.

The Aggwash is typically capable of producing 5 saleable products and 1 trash product, some of these saleable products include; ferrous metal, fine sand, coarse sand, 5-10mm aggregate, 10-20mm aggregate, 20-40mm aggregate and +40mm aggregate. The polyurethane screen meshes can also be easily changed to produce different grades of stone as required.

DUO Mobile Water Treatment Plant.

Awards Ceremony:

The World Demolition Awards, held in Amsterdam on 5th November 2010, were judged by industry figures from the demolition, construction safety, and recycling, mining and environmental sectors. Within the panel there were a wide range of industries represented which led to a host of diverse opinions and views. The ability of the Aggwash to service the needs of so many applications was just one of the reasons for its success. The fierce competition from within the category made winning the award even sweeter, with the Aggwash fending off competition from Caterpillar, Liebherr, LST Group, Komatsu, Volvo and Sagro.

Water Treatment:

DUO, within their wide product portfolio, offer a mobile water treatment plant in the form of a centrifuge that compliments the Aggwash, eliminating silt and water being despatched to a lagoon.

Centrifuges dewater sludge on a continuous process using the principle of centrifugal force. They are becoming more popular in the aggregates industry due to their compact size relative to the production levels, their lower capital cost and their lower operating costs. They produce a dry silt cake typically ranging from 35% to 45% moisture.

The centrifuges that DUO distributes are manufactured by Gennaretti who have over 10 years' experience in processing silts from aggregates. Gennaretti are so confident in the quality of their products that they offer a warranty of 5000 hours on the main wear part of their machines.

In addition to the centrifuge, the DUO Water Treatment Package includes everything required on site including automatic powder flocculent mixing systems, thickeners, water tanks and sludge tanks.

DUO Aggwash and Water Treatment Projects:

Two of the latest Aggwash projects to be installed by DUO will both be receiving full washing and water treatment plants. One will be installed prior to Christmas, with the second following early in the New Year.

The installations at both sites will provide processing facilities for up to 60tph of feed material. The system will float out any unwanted lightweight materials such as polystyrene, plastics and wood. Once the lightweights are removed the aggregate is washed, sized and stockpiled; all on one chassis.

The closed-circuit water treatment plant compliments the Aggwash by removing silt from waste water and returning it back to the wash plant to be reused; thus reducing the water consumption and removing the need for a lagoon.

DUO are looking forward to inviting people to visit both sites in the near future.

For further information please contact DUO (Europe) plc.

www.hub-4.com/directory/928

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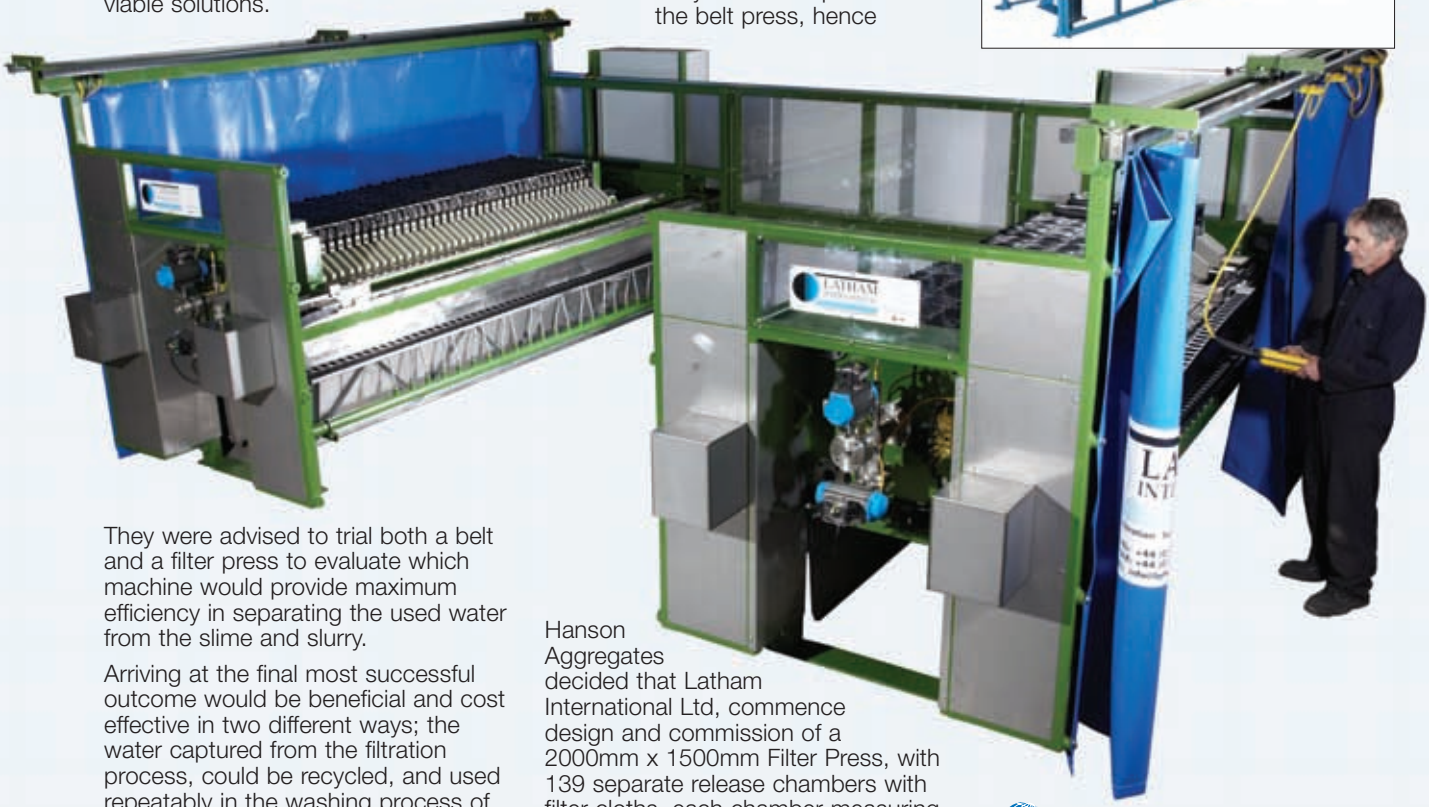
Hanson Aggregates maximise efficiency with a Latham International Filter Press.

Hanson Aggregates UK Ltd. produce construction materials throughout the UK including crushed rock, construction sand and gravel, asphalt, premix concrete, and mortar and decorative aggregates, rail ballast, agricultural and burnt lime; armour stones, granite paving, dimension stones, and recycled aggregates.

When Hanson Aggregates at Whatley Quarry decided that they needed more efficiency in separating the water from the sludge, slime and slurry after the washing process, they selected a few specialist companies within the filtration industry to fully investigate viable solutions.

During the trial period, it was found that the Latham plate filter press separated more water from out of the slime/slurry when compared with the belt press, hence



Hanson Aggregates decided that Latham International Ltd, commence design and commission of a 2000mm x 1500mm Filter Press, with 139 separate release chambers with filter cloths, each chamber measuring 2.0m x 1.5m x 40mm in thickness, with 15 bar operation pressure.

They were advised to trial both a belt and a filter press to evaluate which machine would provide maximum efficiency in separating the used water from the slime and slurry.

Arriving at the final most successful outcome would be beneficial and cost effective in two different ways; the water captured from the filtration process, could be recycled, and used repeatably in the washing process of the aggregates. Additionally, the cake (dry soil/slurry) could be used as landfill in this quarry or any other quarries throughout the company and the UK.

The complete automated cycle with the Latham International Filter Press takes around 45 minutes, and leaves a filter cake, weighing on average, 0.16 tonnes, which equates to around 22-24 tonnes per pressing. The test also showed an achievement of approximately 85% dry solids operation at 11bar during the cake formation state.

www.lathaminternational.com
T: (0)1782 565364

www.hub-4.com/directory/1955

Solving the unsolvable

Some five years ago a customer came to SE Davis & Son with a problem they thought Redditch-based construction and quarrying plant for hire company would be able to solve. As a result of undertaking the surface dressing contract with a particular county council over several years the customer had amassed a stockpile of several thousand tonnes of 'waste' chippings, the excess that had been swept up during the surface dressing operation.

These chippings were too valuable to '*write off*' and dispose of, but not clean enough to be reused. The main problem faced by SE Davis & Son was that they were stockpiled on a disused airfield miles from the nearest water supply and there was not sufficient space (nor environmental permissions) for settlement lagoons.

SE Davis put together (by today's standards) a 'Heath-Robinson' solution that achieved the desired result and washed and screened the waste chippings into a reusable product.

It was a very steep learning curve and in the years that have followed the company has - as a result of the knowledge and experience it has built up - refined the process into the mobile washing systems that it currently operates.

In addition to the mobile centrifuges, cyclones and sand-plants that SE Davis & Son now operates, in late 2009 the company finished constructing the mobile plant that it used to wash the 'waste' surface dressing chippings for seven county councils' contractors this year from as far afield as Norfolk and Kent.

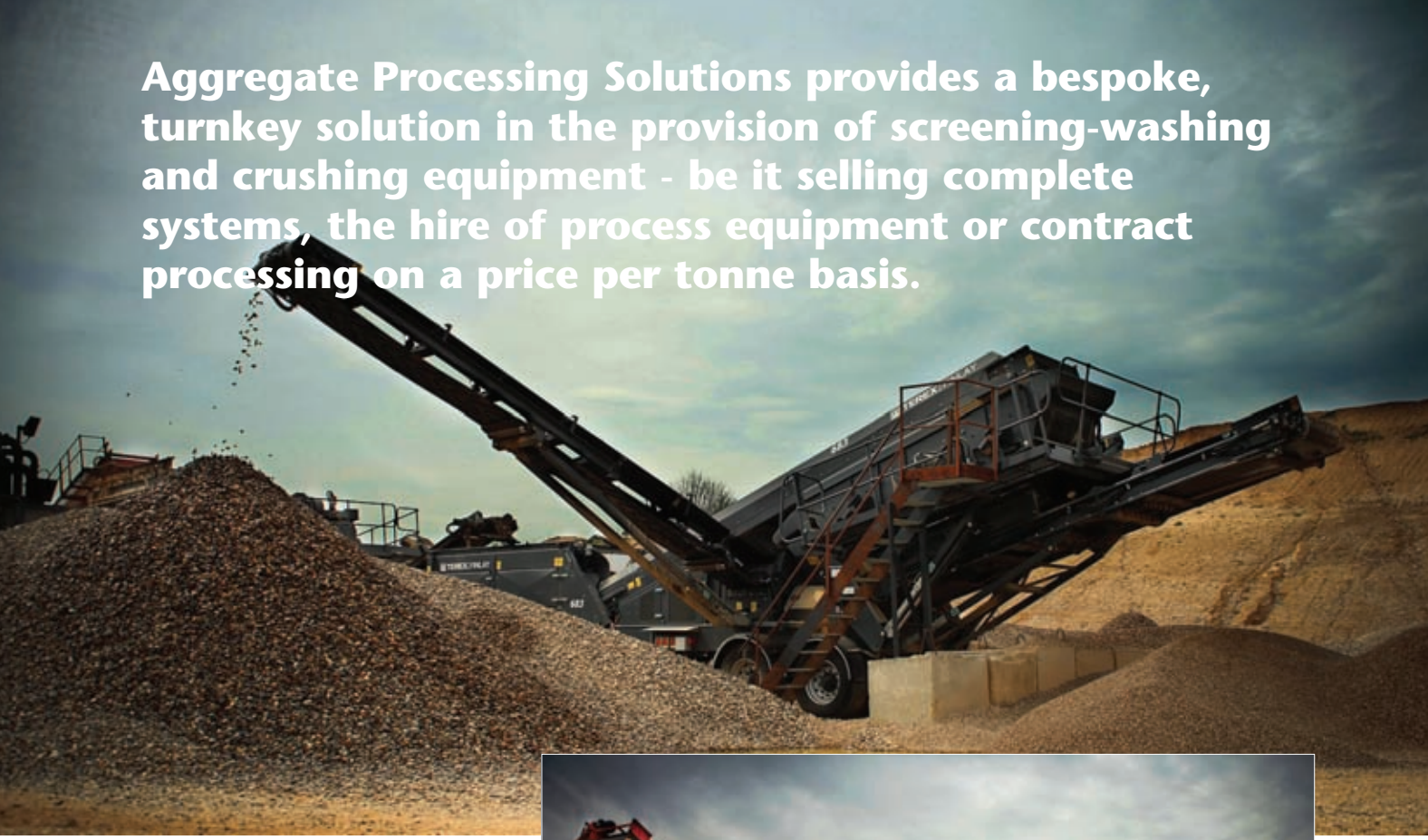
The number of councils that the company is washing for is growing year on year as it is not only cost effective for them but it is also kinder to the environment. As well as the obvious cost savings achieved by recycling the '*waste*' chippings instead of importing new, the 'green' benefits speak for themselves. These include often recycling in excess of 90% of the '*waste*' chippings and reducing the carbon footprint by not having to haul new chippings in from the nearest hardstone quarries, which are often over 100 miles away.

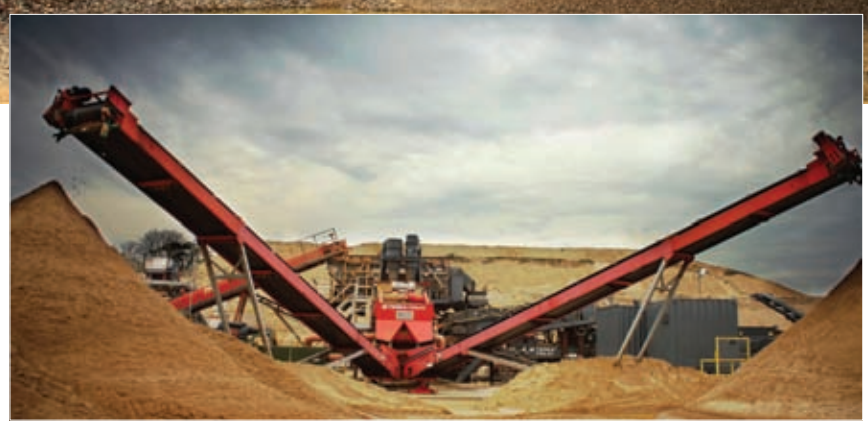
The plants have also been used to great success to wash other recycled aggregates including used railway ballast and a recycled 6F1/Type1 to produce a +20/-40mm drainage aggregate, a +10/-20mm recycled pipe bedding, and +4/-10mm recycled pipe bedding and a recycled sharp sand.

www.sedavis.co.uk T: 01527 893343

www.hub-4.com/directory/11893

Aggregate Processing Solutions provides a bespoke, turnkey solution in the provision of screening-washing and crushing equipment - be it selling complete systems, the hire of process equipment or contract processing on a price per tonne basis.





Every aspect is covered, including the latest innovations in water clarification and silt recovery - with the expertise to deliver solutions in harmony with planning and environmental restrictions - and market-leading on-site back-up and support.

As well as Terex Finlay, the company - part of the Finlay Group - also holds Pilot Crushtec and TRIO dealerships, as well as the Italian Centrifuge manufacturers Baioni.

John Dunne, MD of Aggregate Processing Solutions, said: “We introduce machinery on site, from an 'off the shelf' design and enhance it to a specification that meets the exact needs of the client - leading to the delivery of high volumes of product, combined with significant environmental benefits.”

Aggregate Processing Solutions recently opened a new office in Cambridge to support the work of its headquarters in Stafford and give a platform for growth in the southern region.

An example of the company's 'off the shelf' expertise is demonstrated at Lafarge Aggregate's Mangreen Quarry in Norfolk.

The Terex Finlay MP300 - featuring a Cedarapids 16' x 6' triple deck washing screen, the proven Terex-Finlay 206 Logwasher, a product dewatering screen and two product discharge conveyors - is itself a reused system for Lafarge Aggregates.

Along with a Terex Finlay TC15 Hydrocyclone Sand System, it was originally introduced under a contract basis to Lafarge Aggregates' Brooksby Quarry in Leicestershire, where it was used to initially open up the site and prove the products to the market.

After a successful two-year period at the location, Lafarge Aggregates purchased the plant - which had produced 500,000 tonnes of material - to their new Quarry at Mangreen, where it is processing on an ongoing basis.

The MP300 and TC15 combination is supported by a Terex Finlay 390 Feeder, again brought from Brooksby Quarry and a new Finlay 683 Hydrascreen three way split scapling, screening and stockpiling unit has also been supplied by Aggregate Processing Solutions.

The complete system enables Mangreen, which produces high quality glacial gravel with a significant top coating of clay - to produce a clean product to a high volume - to 40mm, 20mm, 10mm and oversize product, as well as soft and sharp sands. The flexibility of the plant enables sizes to be changed.

See a video of the plant at

www.youtube.com/user/finlaygroup#p/u/11/OGZGT9a-IYA

www.apswashing.co.uk

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