

DUO supply efficient sand processing for Springfield Farm Quarry.

Located at Hotspur, near Beaconsfield, Buckinghamshire, Springfield Farm Quarry is a family owned and operated mineral operation. Operational since 1982 the quarry has extensive reserves of sand and gravel and under the current licence and allowed to process a quarter of a million tonnes/annum.

The original sand processing plant incorporated a 35-year old plant that had clearly reached the end of its life. Gravity fed it was controlled by the weight in the tanks where the air valves were opened to allow the sharp sand to pass allowing control of the blend. This old system although providing large volumes produced a very wet sand resulting in extended drying times before you can sell it.

Seeking a replacement, the management team researched the market for a replacement.

Martin Philips – QM, takes up the story, “Having looked for a new machine the team sat down with DUO who recommended a Terex® FinesMaster 200 Compact machine. Which after subsequent site visits and inspection of the existing plant DUO were given the order to proceed”

The Terex® FM Compact range:

As the English and Welsh dealer for Terex Washing Systems (TWS) DUO can offer innovative wash plants and water management solutions. This demonstrates TWS commitment to providing outstanding innovative products, customer support and expertise in the field to meet customers' individual needs.

TWS provides cohesive solutions such as the Terex® FM Compact range for all material and mineral washing needs. It is focused solely on providing solutions to quarry, aggregate, mining and C&D recycling industries and is dedicated in providing reliable, high quality and very productive equipment to meet individual materials and mineral washing needs meeting today's stringent specifications of clean material.

The Terex® FM Compact range are static sand recovery units designed to be both cost and energy efficient. The range uses centrifugal force within the cyclone(s) to remove clay, silt and slime from sand to bring it into specification. The range combines a collection tank, centrifugal slurry pump(s), hydro cyclone(s) and a dewatering screen on a single modular chassis.

With an output potential of up to 200tph, the FM range offers maximum recovery of all material above 75 µm (200 mesh) and removes silt, slimes and clays below 75 µm (200 mesh). Water is removed to 10-15% of residual water content and a major reduction in saleable material discharging to the pond is achievable.

The FM range should offer quick assembly time and low maintenance, its heavy-duty robust construction ideal for today's rugged operating environments.

Improving operating efficiencies:

After site inspection, installation commenced in June 2015 and commissioning was

completed in June 2016 with DUO supplying an FM200 Compact, pump, associated piping and 2 radial stockpilers.

The existing production line is fed into the main hopper, where the shovel driver mixes the material with the stone which then travels via conveyor to the top, twin-deck screen which removes 50-60% of the sand out straight away, then fed to the scrubber barrel which takes the rest through the bottom screen subsequently feeding a 3-metre primary cone which in turn feeds a secondary 6 metre cone where the material is separated. Here the soft material is intended to overflow and the sharp material sink, with the pump pulling the sharp material from the bottom of the cone up to the sharp sand cyclone. Whatever overflows then flows down the centre pipe to the tank where the second pump picks it up and delivers to the soft sand cyclone.

Anthony Middleton – Site Foreman, commented, “Originally we were only going to have one fine deck but after consultation with DUO it was decided to have a split-deck. All the mats on the fine side are 0-2mm therefore the sharp (0-4mm) remains on the sharp side with any fines falling through to the tank below. These are then picked up by the pump and delivered into the top of the other cyclone which then puts the fines on the other side of the screen, with the 63 microns’ fines going through back into the tank below.”

“Now with the screen rotating anti-clockwise there are dambarss which can be raised. In effect this means you can keep the sand on the screen longer and get it dryer. Currently we are achieving a 10% moisture which is a huge improvement on the old process as that involved extended drying time which increased in the winter.”

Anthony, continued, “Basically we have to deal with sand changes daily, and when the adjustments had been made then the FinesMaster handled it all efficiently, de-moisturising and providing two dry sands. It’s the nature of the beast with any sand and gravel operation as you are constantly faced with changing material. A previous dig we had was fine and processing was easier, the dig where we are now contains massive quantities of ballast with sand underneath.”

The efficiency of the FinesMaster now allows the production team to almost load a truck directly from the stockpile. On average a day’s production is stockpiled with customer’s trucks being loaded the following day.

This innovative solution at Springfield Farm Quarry demonstrates the commitment of TWS to providing outstanding innovative products, customer support and expertise in the field to meet customers’ individual needs, which is achieved through DUO with their dedicated team of engineers, all back by the TWS applications, sales, and marketing and aftersales technicians.