

Modern extraction technique under palm trees – MultiStar filter in the Caribbean



View into production

Jamaica is more than holiday paradise and home country of the world's fastest runner – even in Jamaica sophisticated interiors made out of high quality timber are produced. Since **1985** Dougall Flooring Ltd. produces floor coverings, windows and doors out of domestic tropical wood. With the use of modern German and European processing machines and about **40** employees the company generated in **2013** a turnover of **3,5 Mio. US-\$**.

Together with the experts of Höcker Polytechnik GmbH, Dougall approached in **2013** one of their biggest projects. The ex-



traction unit was very outdated and had to be renewed urgently. The aim was to reduce significant energy costs considerably and to improve air quality at the work places in order to avoid breathing masks for the employees.

A **30** year old cyclone in combination with a raw air fan, **75kW** formed the old extraction system. The efficiency of this combination with only about **28.000m³/h** was extremely low with a dusty working area due to the bad separation efficiency. Additionally **15** movable and mostly ineffective extraction units were used. Hence the suction power summarizes of up to **150 kW** in total. Since electrical power in Jamaica is quite expensive, every saved watt counts. And inspite of the high energy consumption the employees still had to use breathing masks.

Energy consumption reduced of more than 40% and air quality improved

Höcker Polytechnik GmbH developed an energy saving extraction solution for Dougall Flooring which also significantly improved the air quality in the work-



MultiStar – stirrer device filter



Before modernization – inefficient chip cyclone 75kW

ing areas. A MultiStar stirring filter with jet cleaning assures continuous operation. Three clean air fans generate a volume flow of 55.000m³/h and provide even with simultaneous operation of all machines an optimal extraction. The fans have been sound insulated and are positioned on the top floor of the filter. Sound level in the vicinity of the filter is only at 70 db(A) and nearly acoustically perceivable for the employees.

The intelligent PLC system controls the electro pneumatic gate valves and the extraction system. Thus the extraction duct of any processing machine not used will automatically be closed and the frequency converter adopts the speed of the fans. Only as much energy as necessary is used – not any watt more.

Residual dust values in the production have been reduced at about 0,1mg/m³/h and are comparable with the air quality in German productions. Breathing masks be-



Before modernization 15 mobile dedusters have been overstrained

long to the past. The extracted chips are compacted in the ratio 1:7 with a briquetting press type BrikStar V11. This allows

the optimal use of existing storage capacities. The briquettes are ideally suitable for heating value optimized combustion. Self-used for thermal recovery or sold – briquetting is always profitable.

Modernizing always pays-off within a few years

The extraction technique from Höcker Polytechnik considerably reduced the energy consumption. Even with the reduced power consumption Dougall saves about 50.000 US-\$ per year – and the annual costs of 5.000 US-\$ for breathing costs can be saved as well. Due to the low following costs a well thought-out system pays-off within a few years. Not to be calculated the profit due to the increased health protection of the 40 employees and the much better product quality.

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