

When Wimbledon decided to upgrade its existing plant in Ho Chi Minh City, Vietnam, it looked to Lignar Engineering, the agent of Moldow dust extraction and filtration systems in Southeast Asia and China.

Wimbledon International, a leading furniture manufacturer was looking to upgrade the chip and dust extraction system for its plants and had high expectations for the new system: high efficiency, flexibility, fire safety, energy savings, reliability without breakdown problems, better layout and impressive appearance. Wimbledon's factory in HCM City was running two shifts, including Sundays. The existing factory had already been running for more than five years.

High Energy Costs

The existing dust extraction system was found to be inefficient incurring high energy costs and faced the basic problem of fire safety, which was lacking in the

concurrently with upgrading works. It took about two days to switchover, followed by dismantling of old system and ducting. A lot more planning and coordination is involved compared to new factory installation. Lignar Engineering took one and a half months to put in place the new system. The installation consisted of two Moldow High Load filters, each equipped with two high efficiency, energy saving fans. The new installation offered a better working environment and a safer system. The company also has a Malaysia plant that

and two high-efficiency fans. One of the fans is controlled via a frequency converter performing automatic regulation of fan revolutions adapted to the air volume required at any given time depending on the production machines in operation. Consequently, the plants always operate at the exact required exhaust capacity and the lowest possible energy consumption.

Energy saving and flexible Transflow system



The Wimbledon Challenge

existing plant. The existing installation also lacked flexibility. It was difficult to reorganise the layout of factory floor to improve production.

For Lignar engineering it was a more challenging job than a new factory setup, as a switchover from the existing system has to be facilitated. However Lignar already has extensive experience in the upgrading of dust control systems.

Concurrent Operations

Installation was more difficult as existing factory operations were running

has switched over to the energy saving Transflow dust collection system.

For the HCM City factory, the basic specification for the new system is:

- Total capacity: 220,000 m³/hr
- 4 fans: 75 kw x 2, 55 kw x 2
- 2 x MHL 336 filters (110,000 m³/hr each)
- 2 x Tranflow systems (approx 50 m)
- Fully automatic control system with inverter control for fan speed

Energy Savings

Each filter is equipped with Transflow

Flexibility

Waste is removed by a chain conveyor making a duct system dispensable where a minimum transport speed must be kept to ensure sufficient exhaustion. The chain conveyor is driven by a 0.55 kW gear motor making it very energy saving.

Economy

As the heavy material is removed by a chain conveyor, the system can be fitted with a small conveyor fan (11-15 kW), whereas the remaining air volume exhausting the dust can be exhausted by highly efficient

fans yielding up to 90 percent with large energy savings as a result.

Filter Technology

The Moldow High Load (MHL) filter was chosen for the negative operating extraction system for the production areas. This filter type is specially designed for high loadings and high pressure cleaning where continuous operation is required. The filters are designed to operate in systems with a pressure difference of maximum 5,000 Pa. The filter bags are fitted with an inner spring bracing and a special bag design reduces the air velocity between the bags, which increases the air and dust load considerably.

Future Expansion

Extensions to the filter system can be easily implemented when more machines and air capacity is required by

simply adding on more filter sections and fans. Downtime is minimal, usually requiring two days. The system also allows filter capacity to be increased quickly and easily. The Moldow modular filter system can be extended to a length of 30 m or capacity of 330,000 m³/hr. With two separate filter systems, both factories can run independently, giving greater flexibility.

Among the major benefits of the new dust collection system are increased efficiency, fire safety, flexibility, reliability, improved layout and easy expansion. The end user can easily relocate the machines to improve the layout so as to increase



High efficiency fans and Moldow MHL filter system

productivity. Furthermore, no hot works is required for adding on ducting to the Transflow system. **FDM**

Information and pictures provided by Lignar Engineering.