

Foster Yeoman

Trials of an innovative asphalt plant in Germany are providing a vital link in Foster Yeoman's ambitions for expansion into added value markets in Northern Europe.

New technology fosters European growth

An unusual array of eight ISO sea containers erected 20km from Hamburg's sea port has been producing asphalt since April 2000 for a new European asphalt venture. The containers house one of a new generation of asphalt plants that promises to produce significant cost savings through its high mobility, simplicity of design and low energy consumption.

This is according to Foster Yeoman's European Business Development Manager Simon Turk who is also one of three managing directors of the Nordheide Asphalt joint venture.

The Containerised Screen Drum (CSD) asphalt plant has been developed by German manufacturer Lintec, which has teamed up with British aggregate and coated stone supplier Foster Yeoman and the French road construction group Eurovia to form Nordheide Asphalt.

The French conglomerate is represented in Nordheide Asphalt by its German asphalt producer Verkehrs Bau Union. This was the state-owned organisation solely responsible for all motorway and

main road construction in former East Germany.

Foster Yeoman has been marketing its uncoated stone products in Northern Europe through its Hamburg deep vessel port since 1986. Supply has mainly been from the company's massive 6Mt per year capacity Glensanda quarry in Scotland.

But over the last five years further trading arrangements and joint ventures have been set up with other quarrying companies to allow Foster Yeoman to provide a full range of aggregates for asphalt production in Northern Europe.

"With a firm foothold and internal supply networks now established for our aggregates in Northern Europe, we have teamed up with Lintec and Eurovia to develop our business further into the added value asphalt market," says Turk.

"Nordheide Asphalt is providing a live demonstration of Lintec's CSD asphalt plant, a strong entry into Europe's asphalt market for Foster Yeoman and a source of high quality asphalt for Eurovia."

Lintec's CSD asphalt plant features several key differences from conventional plants. Its housing in ISO standard containers is the most obvious to the eye and enables transportation at low cost by and between sea, rail and road, says Turk.

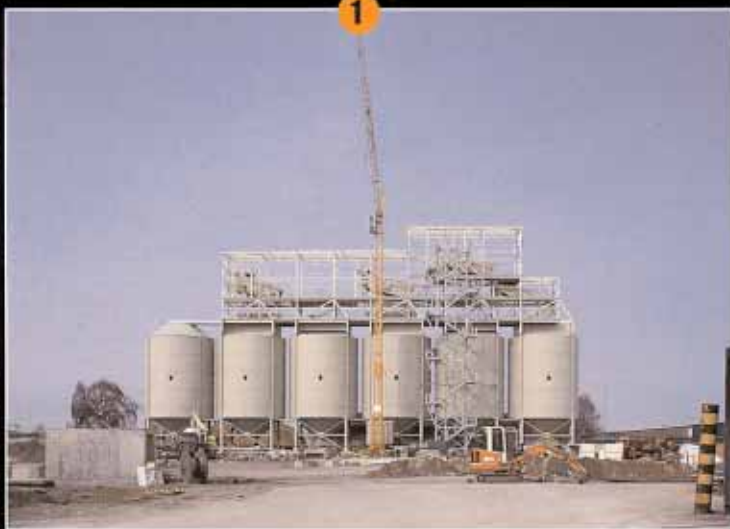
The containers' large footprint also precludes the need for specially constructed concrete foundations for the plant if the ground can withstand a load bearing pressure of 120kN/m².

"The plant is quick to assemble as the various parts only require connection once the containers have been lifted into position – an operation that can be carried out using one 70t crane for an eight hour period," says Turk.

"There are other benefits from the containerised layout. For instance, access to any part of the plant is impossible without first passing through the control cabin at ground level, which provides greater control over safety. The configuration also includes one empty container at mid-height in the mixing tower that can be used as a workshop and for storing additives, oils and lubricants.

"But the most innovative feature of the CSD plant is its integration of drying and screening at high level. The design has greater simplicity and therefore ease of maintenance than conventional plants, and is more efficient as the heated stone does not have to be lifted by a hot-stone elevator prior to grading."

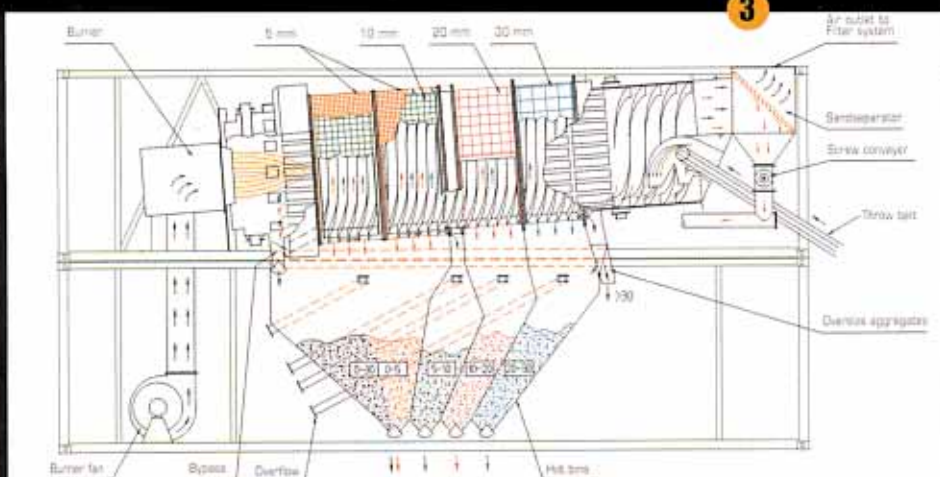
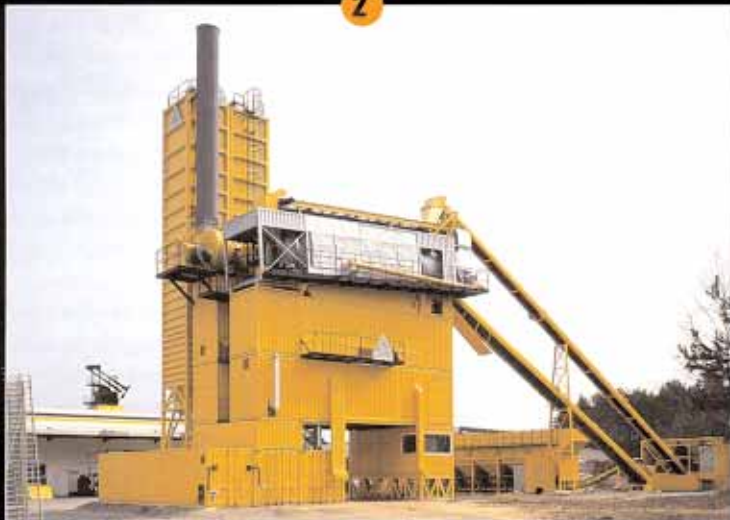
For those unfamiliar with asphalt production plant, the normal arrangement feeds unsorted aggregates into a rotating drying drum. A hot-stone elevator then lifts the heated stone onto an array of



1. Foster Yeoman plans to link the Lintec plant to its virtual quarry terminal in Hamburg.

2. Nordheide Asphalt is demonstrating Lintec's containerised asphalt plant and developing new markets for Foster Yeoman.

3. Lintec's CSD system produces energy savings by combining screening and conduction and convection drying in one drum.



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Simon Turk

horizontal vibrating screens which sorts the material into grade-separated hot bins.

The Lintec CSD system combines drying and grading in one drum, which has screens attached to feed spirals running around the periphery of the drum's internal skin.

The aggregate first passes through the drum against the flow of hot air, then drops into the feed spirals between the drum body and the screens and is graded as it is pushed by the spirals back along the outside of the drum.

Onwards from the sorting process, the Lintec CSD system is very similar to other plants. "Lintec's system has combined two operations in one part of the plant and the aggregate is heated by both convection in the drum and the conduction effect from the drum skin during the screening process. It therefore follows that the system is more energy efficient than the conventional plant arrangement," says Turk.

The plant now working under trial for the asphalt market of Hamburg and the surrounding Niedersachsen area has a capacity of 160t of mixed material per hour. But the modular design allows capacity to be increased to a maximum of 250t/hour.

The Lintec CSD can reprocess up to 30% recycled asphalt, which is incorporated into the mix after being reheated and screened. It can also provide the very high temperatures required for production of high performance mastic asphalts commonly used for road surfacing in Germany.

"Lintec has already carried out successful trials of its CSD system in Poland, China and Thailand. Given that the German trial is expected to go well, we are looking to move the Lintec plant to our Hamburg terminal and link it to a fully automated aggregate screening installation currently under construction.

"This will create our first virtual quarry terminal in Northern Europe capable of fully automated aggregate handling and the screening and production of added-value products."