SUZHOU PAPYRUS PAPER READIES 100,000-TON COATED FINE PAPER MILL

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Suzhou recently completed a new industrial area of the city to accommodate the industrial growth in the central coastal area of China

THE IMMINENT COMPLETION OF A GREENFIELD PAPER MILL FOR SUZHOU PAPYRUS PAPER CO. WEST OF SHANGHAI, CHINA, SHOWS A UNIQUE RELATIONSHIP WITH VALMET, THE MAIN EQUIPMENT SUPPLIER. THE MILL ITSELF DEMONSTRATES CHINA'S COMMITMENT TO BECOME A MAJOR SUPPLIER OF COATED PAPER FOR INTERNAL USE AND FOR EXPORT.

The Suzhou Papyrus Paper Co., Ltd.is in the final stages of completion of a major greenfield paper mill situated on the inland waterway system of China west of Shanghai. Suzhou is a new, large-scale joint-venture with funding from Purple Charta Investments Ltd., Suzhou Huasheng Paper Mill, and Suzhou Association of Handicraft Cooperatives. Ronnie C. Chan is board chairman of Suzhou Papyrus Paper Co., Ltd. The Purple Charta Investments Ltd. founded and led by Chan holds 80% of the project shares.



(left) Housing is tight in this region of China and the mill is sandwiched in between other industrial facilities and local housing for some of the mill construction workers.

(below) The Suzhou District Electrical Generation Plant, located on the land next to the mill, holds the key to development in the new Suzhou Industrial District. Due to be completed in July, it will furnish the electrical power for the mill.



The cost estimate for construction of this plant that will produce 100,000–200,000 metric tons per year of coated fine paper is US$ 200 million. Most coated fine paper used in China now comes from import.The main grades will be art paper, fine magazine paper, and cigarette soft pack. The basis weight will be 60–157 g/m^2. The specifications of the coated paper are 787 x 1092, 880 x 1230,and 889 x 1194 sheets, respectively, for the three grades mentioned. In addition, the mill will also produce special grades of coated paper in rolls to meet specific customer needs.The quality of the products will meet ISO standards.Production should begin in 1996.

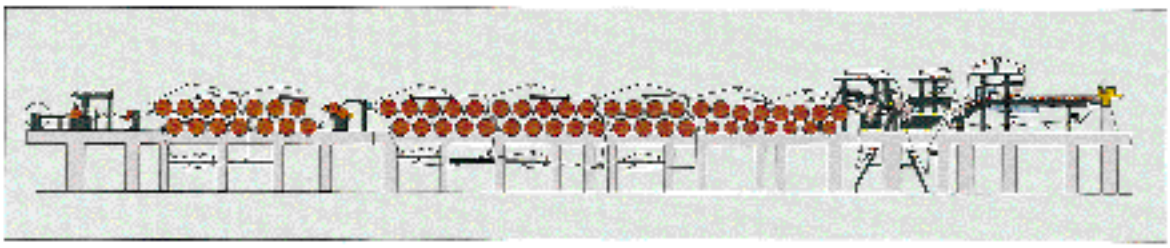
Most mills in China use indigenous pulp sources.This new mill will use chemical market pulp from outside suppliers.It will produce coated paper to meet the needs of local printers—China has a developing printing industry that is quite strong—and provide an export commodity. China wants to make paper for internal consumption and for export to other developing markets. The new mill will give China the ability to process pulp into paper at a cost that is competitive to world market rates.



The clarifiers for the effluent treatment are located between the machine room and the office building.

PLANT DESIGN

The loop design of the Suzhou mill is unique. Chemical market pulp from overseas will enter one corner of the building at the basement level.There this raw material will undergo storage until required for repulping.



Project	SUZHOU PAPYRUS PAPER CO., LTD., PM1, CHINA
Grade	Softpack, art & magazine paper
Basis weight	60 – 120 g/m²
Wire width	4 300 mm
Design speed	1 000 m/min

I. Schematic of Suzhou's fine paper machine

The purchased pulp will go through the repulping and blending stations. It will then move into the stock preparation area.A high-density storage tank system will balance the system demand. The pulp will enter the headbox of the machine and pass through the machine to the dry end continuously. The paper machine has three broke repulpers and a four-nip press with a smoothing press. There are two sections of dryers. The main dryer is before the coater, and a second dryer before the winder follows the coater.

Jumbo rolls of finished product will move laterally across the building to the rewind, finishing,and converting stations.After the finishing and sheeting areas,product will move into a warehouse midway down and parallel to the machine side of the building. Shipment will be from a loading dock next to the mill entry.

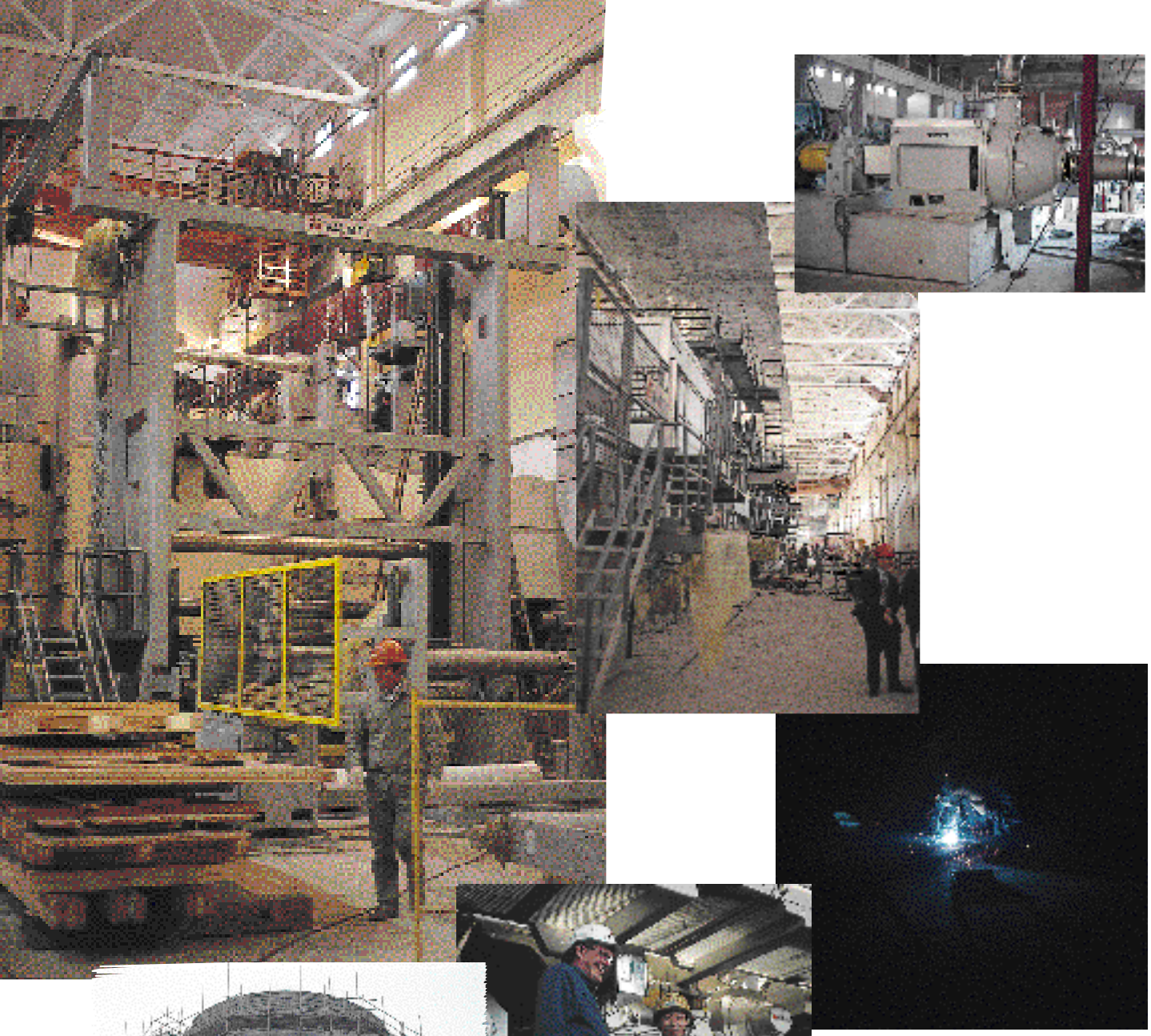
This loop layout is critical to the efficient operation of the mill.In this area of China,land is scarce. The mill location is between other industrial developments and is next to the power station that provides the electrical power. The mill design provides fast turnaround for trucks. Since there are no rail or water connections, a rapid turnaround time is important in the crowded traffic conditions existing in this part of China.

EQUIPMENT DESIGN

The new mill uses imported equipment from Valmet Finland with units from Ahlstrom, Sunds, ABB, Roibox,and Jylharaisio.Other suppliers include major manufacturers such as Jagenberg AG and Wrapmatic S.P.A. All equipment will make extensive use of computer control.

Valmet is the prime equipment supplier for the mill under an unusual arrangement.Valmet acts not only as an equipment supplier but also as the general contractor. Business conditions in China make it easier to have a single major supplier provide most equipment. Because import and export are still difficult in China,this arrangement with a single supplier speeds the import of the necessary equipment.

CTS Engineering of Finland designed the mill. Valmet provided the paper machine and the coater that are the essential components of the mill **(Figs. 1 and 2)**. They also supplied the winders, the supercalenders, and the roll-handling system. Valmet has guaranteed the proper function of these critical system units for the operating conditions of the mill. Ahlstrom supplied the stock preparation units,the pulpers,and the wastewater treatment system.Sunds provided the fiberizers and refiners. ABB furnished the drives for the machines and the winders. Roibox—a unit of Valmet Automation—, also participated. The wet end chemical system and coating

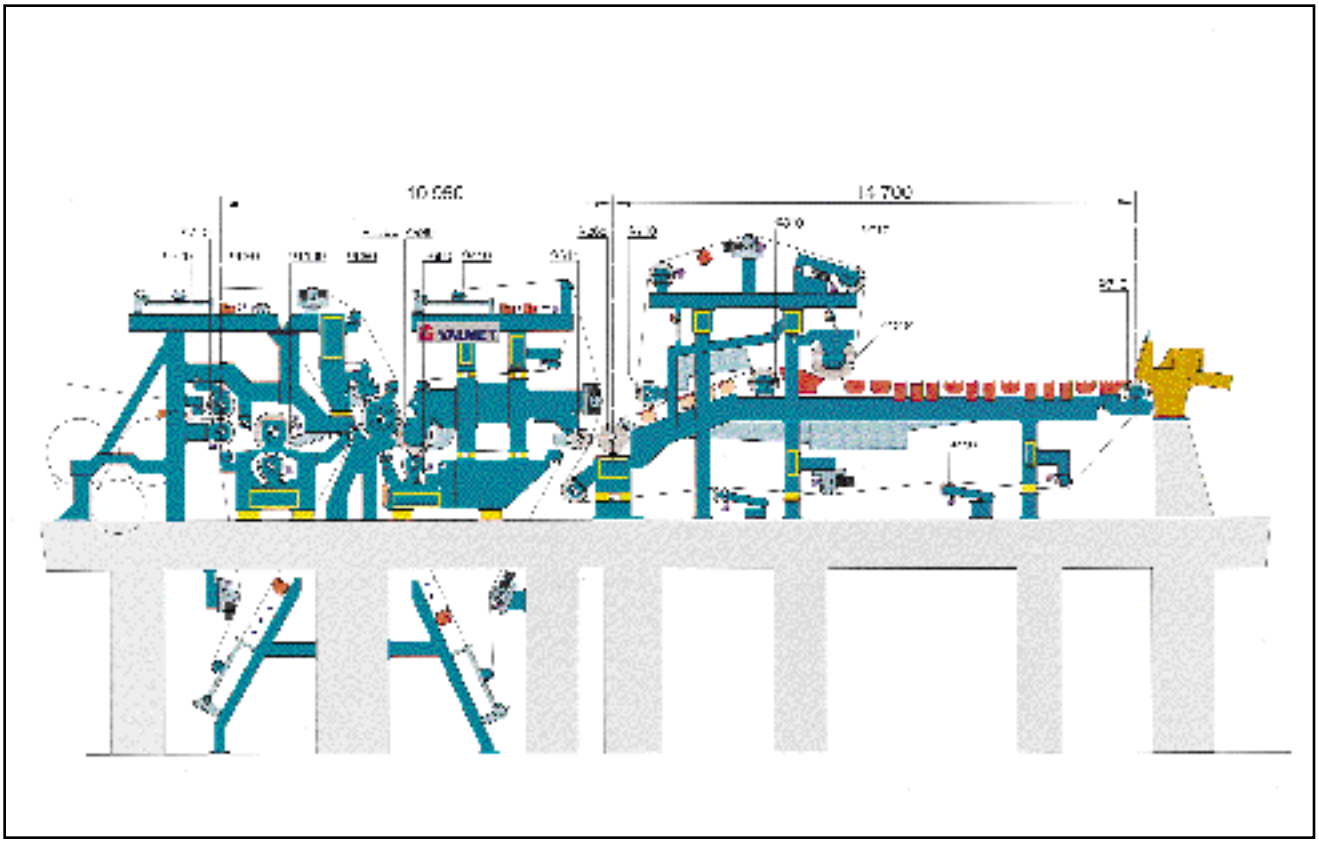


Views of the Suzhou mill

color kitchen are from Jylharaisio. The sheeters are from Jagenberg. Wrapmatic S.P.A.supplied the roll wrapper for the sheeting plant.

The machine has a Sym-flow headbox.The air handling system is by Valmet. The coater has four coating stations with air dryers and cylinder dryers at each. These provide sufficient capacity to handle the full load of the machine.

The web of the paper machine system is 3.8-m wide.The designed speed is 1000 m/min. Daily base paper production rate will be 300–350 tons. The coater, the supercalender system, and the highly efficient ac frequency conversion drive system all use state-of-the art equipment.At 70,000 m^2, the coated fine paper mill is as large as any in China.



2. Schematic of Suzhou's forming and press section

POWER PLANT

The mill will use commercial power from a facility being built next to it by a local Chinese government agency. Since the mill cannot operate without power, completion of the power plant will determine the startup. The mill location is in a new section of Suzhou intended as a commercial district.When it opened,this commercial district selected the new mill as one component of its heavy industry to use power from the new plant.Coal will fire the power plant.It should begin production in July 1996.

STARTUP AND PERSONNEL

There is no skilled labor pool at the location of this mill in China. Farmers who receive on-the-job training are constructing the mill. This is typical for mills built in developing countries. In such an arrangement, the construction of the mill is a component of the training for some future workers. The mill has contracted with Valmet and other suppliers to train the primary machine tenders. There are currently 149 people receiving this training in Finland.Upon completion of the training program,the workers will return to China in time to participate in the final machinery tests.**TJ**

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OBTAINING THE STORY IN CHINA

This story is the result of arrangements made by Leo Allo, vice president of customer relations at Valmet, for press members at China Paper 95 to visit a mill under construction (Fig. 13). The press flew from Beijing to Shanghai and took a two-hour bus ride to the Suzhou mill.



Attendees on the press tour arranged by Valmet

Suzhou is the ancient silk capital of China. It was the terminal point for Marco Polo's journey to China in the 1200s. It has a long history as a commercial capital for China. With the exploding growth of Chinese industry and especially the export-oriented industry, it is again a center for many kinds of development.

The paper mill described in the article shows new growth in industry as China tries to add to its enormous base of agricultural based pulp. It is a move toward developing a paper industry that can compete with other mills with identical grades and properties.

Currently the Chinese industry has over 10,000 paper mills.Most are extremely small local mills that produce wheatstraw-based paper for local consumption.This new mill will specifically meet the needs of an export market whether supplying paper or printing products made with the paper. The ultimate goal of this mill and its coating machine is to bring foreign currency into China by selling product on the world market.The ambitious nature of this project and the close cooperation that the Chinese have developed with their core suppliers are interesting aspects of China's business climate.

China is no longer closed to industrial development. Their methods and techniques are different, however. They seek strong partnerships with companies who have proven successes in a given area. In my story in the March issue of *TAPPI JOURNAL* about China Paper 95,I quoted Leo Allo, Ed Siedlak, and Professor Zhong regarding development in the Chinese paper industry. Their comments suggested this mill is an important milestone in such development. There are several other projects also in progress. Within a decade, there should be new growth in the Chinese industry to supply their own markets.

Fiber is the core issue influencing this entire industry. China does not have enough fiber to create sufficient paper to meet its own demand.It therefore must develop better ways either to pulp and use agricultural fiber or to import a stable source of raw fiber. It currently imports recovered paper from North America and Europe and market pulp from around the world including Asia.China has also begun studying raw fiber sources such as wood chips. There are also tentative ventures north of the border into Siberia.

China's ability to establish stable fiber sources will determine the future strength of its paper industry. For now, the impressive nature of this mill—built literally in a green field by a country never seriously considered as a competitor in the paper industry—is something to ponder. **TJ**