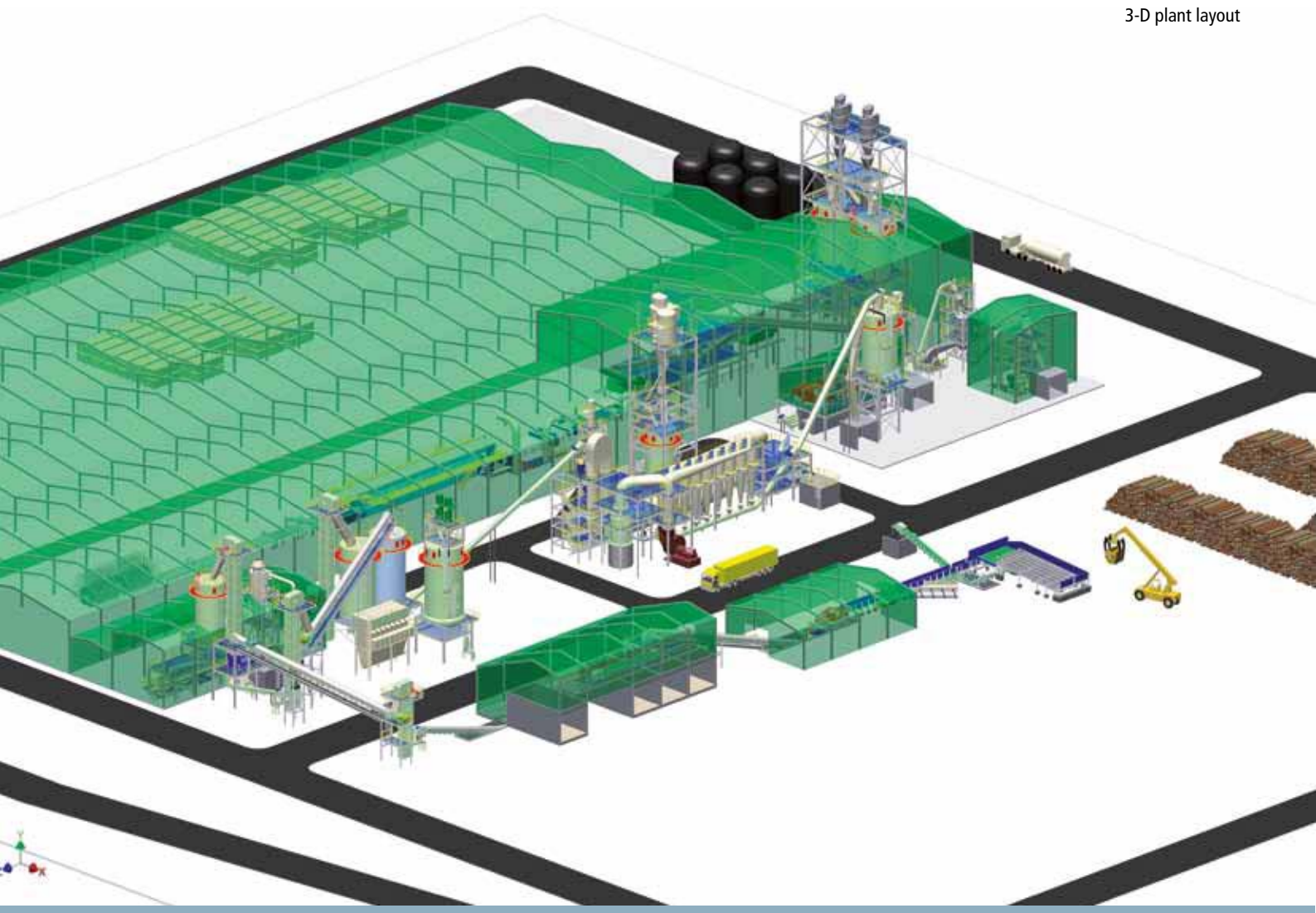
Start-up at Ivatsevichdrev:

Complete particleboard plant sets



3-D plant layout

Start-ups are pleasing culminations to plant projects celebrated alike by plant manufacturers and operators. A special start-up took place at OAO Ivatsevichdrev in Belarus in October: the start-up of Siempelkamp's first particleboard production plant supplied completely according to the "single-source" principle!

By Ralf Griesche

milestones

The state-owned Ivatsevichdrev company ordered the plant with the special scope of supply in September 2008 (see box). Siempelkamp excelled over strong competition in the public tender procedure.

All divisions for wood-based products of the companies of Siempelkamp Maschinen- und Anlagenbau are involved in this order: The Belgium subsidiary Sicoplan was responsible for the overall planning, Hombak supplied the machines for the particle production, Büttner the energy plant and the particle dryer. The Italian subsidiary CMC provided the screens, silos, the blending system, and the matformers. Siempelkamp in Krefeld supplied the forming and press line, the finishing line as well as two short-cycle presses and the storage technology. The electrical switchgear cabinets by ATR as well as the measurement, automation, and control technology systems also came from Krefeld. The technological start-up was carried out by Siempelkamp specialists.

Ivatsevichdrev, one of the largest wood-processing companies in Belarus, is part of the "Belarusian Production and Trade Concern of Forestry" and the "Woodworking and Pulp-and-Paper Industry". With more than 1,000 employees the company is also one of the most important employers in the region.

The high-performance plant was built at the company's location in Ivatsevichy, a district town near the city of Brest between the Belarusian and Polish border and the Belarusian capital Minsk. An old Russian particleboard plant is operating at the same location.

To comply with the strict environmental requirements, wet electric filters clean emissions from the dryer and the press. This represents just one more feature turning this plant into the most modern and best-performing one in Belarus.

After the Belarusian city gave the green light for the buyer to obtain a loan in the form of a government guarantee, construction of the plant started in spring of 2010. The new Siempelkamp plant guarantees the customer a daily capacity of 800 m^3. Even more is possible because the plant was designed with a reserve of 30+ percent. With a yearly capacity of approx. 330,000 m^3, the country's production of particleboard will almost double!

Particleboard plant for Ivatsevichdrev: complete spectrum

- Planning, engineering, technical start-up
- Debarking equipment primarily for the processing of aspen trees, but also wood from pine, spruce, birch and alder trees, with the removed bark used as fuel
- Wood feeder
- Complete chipping line primarily for the processing of logs but also for saw mill trim
- Chip storage
- Particle preparation
- Screening
- Re-chipping
- Dry particle silos for surface and core layer material
- Resin preparation and dosing system
- Blender for surface and core layers
- Energy plant (31 MW capacity, see interview)
- Dryer with downstream wet electric filters
- Matformers for surface layer and core layer chips
- Forming and pressing line with 7' x 28.8 m ContiRoll®
- Cooling and stacking line
- Automatic intermediate storage for raw boards
- Sanding line
- Automatic intermediate storage for sanded boards (connection to short-cycle presses)
- Stacking boxes
- Strapping line
- Two short-cycle press lines for the laminating of particleboards with automatic feeding system, in addition, an automatic paper pallet storage system and a strapping line
- Automation technology
- Mechanical and pneumatic material handling equipment for the inside and outside areas of the plant
- Complete shipping of machines to the construction site
- Installation supervision
- Start-up

With just under ten million inhabitants, the per capita consumption of wood-based materials is not very high compared to Western Europe and offers considerable room for growth. These are optimal conditions for this new particleboard line, which has been operating at full capacity since October 2012!

1 | Particle production

The first particles

Debarker

Log feed

Feeding of the chipper

Chipper

Chip silo

Flaker

Gravimetric separator

Energy plant

Dryer

Dryer and energy plant

Roller separator

Oscillating screens

Silo for surface layer and core layer particles

Glue kitchen

Dosing bin

Blender

Interview with general manager Boris Mikhailovich Mikhniuk, OAO Ivatsevichdrev:

From sawmill to a performance-strong particleboard manufacturer

For Bulletin general manager Boris M. Mikhniuk outlines the ambitious objectives that OAO Ivatsevichdrev has set for itself with the new Siempelkamp complete plant.

Mr Mikhniuk, please tell us about the history of Ivatsevichdrev.

Boris M. Mikhniuk: Our plant started operating in 1922. Back then we concentrated on the production of sawn lumber as the only product. The beginning for today's modern operative structure was marked by the construction of a particleboard plant and a short-cycle press line as a result of a directive from the Ministry of Wood Industry of the former Byelorussian Soviet Socialist Republic (BSSR). These machines started operating in 1971.

The Ministry of Wood Industry of the former USSR bought complete plants for the production of laminated particleboard from Germany and Finland in the 1970s in order to develop furniture production. One of these plants was intended for the former BSSR and handed over to the wood-processing association of Ivatsevichy. The start-up of one plant for the production of laminated particleboard took place in 1976.

* BSSR = Belarussische Sozialistische Sowjetrepublik

Signing of the contract on September 26, 2008
from left to right: U. Kaiser, J. Phillips, M. Mikhniuk, N. Paplauski

In the 1990s the conversion into a joint stock company took place ...

Boris M. Mikhniuk: In August 1993 the business association was first converted into a closed joint stock company "Ivatsevichdrev" (limited liability company); then later, in December 1993, into a public joint stock company.

What market position does your company hold in Belarus?

Boris M. Mikhniuk: For several decades Ivatsevichdrev has satisfied the customers' demands with a broad selection of products as well as supplier parts, for example, for the furniture industry. Our manufacturing program includes a wide range of goods for the furniture industry ranging from sawn timber to decorative films.

With its activities in local and international markets, Ivatsevichdrev has a reputation as a reliable partner. Customers from Belarus as well as many other countries trust in our company.

For how long has Ivatsevichdrev been involved in the production of particleboard / furniture panels?

Boris M. Mikhniuk: Since 1971.

Who made the decision to invest in a new plant – and how did Siempelkamp get involved?

First board on May 13, 2012

Boris M. Mikhniuk: In July 2006 Alexander Lukaschenko, President of the Republic of Belarus, visited our company. It was then that the decision for the upgrading of the Belarusian wood-based material production plants was made, one of which was Ivatsevichdrev. As a result of this decision a presidential decree was enacted in October 2007 which meant the go-ahead for the project "Technical Retrofit Ivatsevichdrev".

Our relationship to Siempelkamp has had a professional and reliable development. For such a large and comprehensive project, however, some friction losses were unavoidable, for example, in the time and delivery schedules.

What expectations have been set for the new high-tech plant?

Boris M. Mikhniuk: The main priority is to produce a product with high quality at low production costs. This will allow Ivatsevichdrev to further strengthen its position in the market and to penetrate new markets.

The new plant is completely made by Siempelkamp including the energy plant and short-cycle presses. Why did you decide to obtain everything from a single source?

Boris M. Mikhniuk: We are convinced that this concept will allow us to react instantly to possible operational difficulties. Furthermore, it was important to us that our supplier can provide us with machines and equipment that are absolutely compatible with one another.

Where does the supply of raw wood for the plant come from?

Boris M. Mikhniuk: The wood and resin is supplied completely from within the Republic of Belarus. Our main supplier for the chemical components is the Russian Federation.

What assortments of particleboards do you manufacture?

Boris M. Mikhniuk: We are guided completely by our customers' needs. The portfolio is very comprehensive. Whatever the market demands takes priority in our production.

What do you currently focus on?

Boris M. Mikhniuk: Currently, our experts dedicate their time to the complete wood processing cycle and the production of our end products. At the moment though, all forces are focused on the completion of our current project – our complete plant.

Will there be a big opening ceremony?

Boris M. Mikhniuk: It is planned that leading personalities of the state will visit our plant and be present for a symbolic production start.

Thank you, Mr Mikhniuk. We wish you future success for the production with the new and complete plant!

2 | Forming and press line

Forming and press line

Forming line

Press line

SicoScan Moisture analyser

SicoScan

Double diagonal saw

Fresh air supply for the hall

Siempelkamp energy system for Ivatsevichdrev:

More independence, lower costs, higher integration

One plant component Ivatsevichdrev purchased in the latter part of 2010 was the energy system from Siempelkamp Energy Systems, today part of the Siempelkamp subsidiary Büttner. With this energy system, our customer benefits in two ways: from the optimal concept thanks to Siempelkamp's single-source principle and from being independent from expensive gas imports. Ines Veckenstedt, Managing Director at Büttner, and Dr. Hans-Günther Schwarz, Senior Sales Manager, explain the details.

What role does the energy system play for your company?

Ines Veckenstedt: Büttner Energie- und Trocknungstechnik supplies energy systems with a broad capacity spectrum ranging from 10 to 88 MW. With 31 MW the firing capacity of the system for Ivatsevichdrev is at the lower end of our spectrum. However, regardless how big or small, each concept is equally important to us. Our energy systems are always custom-designed and exactly tailored to such factors as outside temperature, climate, and any kind of scrap or waste wood.

Was there anything special about this order?

Dr. Hans-Günther Schwarz: Of particular importance was that significant amounts of bark are supplied from the debarking equipment as fuel. The joint planning of the plant by the companies of the Siempelkamp Group resulted in an optimal arrange-

from left to right: Dr. Hans-Günther Schwarz and Ines Veckenstedt

ment of the equipment with short transport distances. In close cooperation with the Belgium Siempelkamp subsidiary Sicoplan we furthermore developed a concept that allows us to use the contaminated exhaust vapors from the press as combustion air for the energy system.

How large is the grate, the core component of the energy plant?

Dr. Hans-Günther Schwarz: The energy plant for Ivatsevichdrev has a grate that is 41 m², is able to heat 10.5 MW of thermal oil and to generate 20 MW of flue gases for the dryer.

How is the thermal oil used?

Dr. Hans-Günther Schwarz: The thermal oil is used to heat the ContiRoll® , the short-cycle press lines and the building.

Energy plant

Which plant features are also important?

Ines Veckenstedt: Our advanced and matured process automation technology provides for a safe and stable production. Our equipment requires low maintenance and cleaning efforts. The hot flue gases for the Ivatsevichdrev project are pre-cleaned by a cyclone dust collector before they are fed to the dryer.

Plant operators that decide to install their own energy plants gain significant independence from external energy sources …

Ines Veckenstedt: Indeed, the advantage of becoming independent from external gas supplies by installing an energy plant was the decisive reason for awarding us this contract. Instead of burning imported natural gas, Ivatsevichdrev uses bark, fine particles, material from board trimming, and sanding dust.

To what extent is the need of the market met by having an energy system specialist included in the group of companies of a manufacturer for wood-based material production plants?

Ines Veckenstedt: A look at our reference list demonstrates that the number of plants for the combustion of biomass has significantly increased over the last few years. The reasons are obvious: Expensive fossil fuels are replaced by inexpensive waste materials from renewable resources or by production waste which accrues anyway. The fact that a manufacturer for wood-based material production plants includes an energy system specialist in its group of companies has the advantage of optimizing critical interfaces. After all, regarding the process technology and the engineering, energy plant and dryer belong together.

Dr. Hans-Günther Schwarz: The integration of an energy system into the engineering of the entire plant provides the customer additional reliability. Last but not least, the plant operator saves time and money through joint purchasing of plant components and an installation and start-up that is coordinated in the overall project.

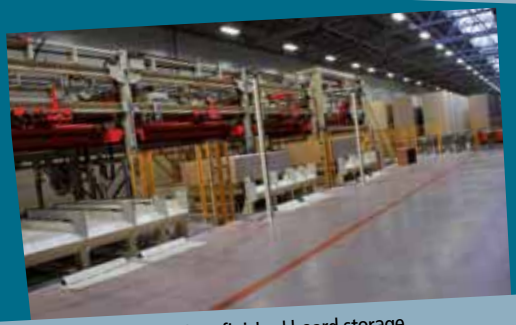
3 | Finishing line

Cooling and stacking

Stacking

Intermediate storage

Sander



Stacking boxes with unfinished board storage
for the feeding of the short-cycle press

Handling of complete orders at Siempelkamp:

A concentrated and integrated process

How is a complete order according to the single-source principle processed by Siempelkamp? What advantages does the concept provide for the customer? "Bulletin" talked to project manager Kurt Sommer, who has worked for Siempelkamp for 23 years

Mr Sommer, to process a complete order in a dimension as the one for our customer Ivatsevichdrev is a big challenge. What is necessary to turn a project like this one into a success?

Kurt Sommer: Transparency, meaning a concentrated project and process management. The particleboard plant for Ivatsevichdrev was the first plant that Siempelkamp supplied completely from a single source. The benefits of our full-service principle became clear during the course of this project. The more outside companies are involved, the greater the risk of friction losses even when dealing with valued partners. A group such as ours, which is able to design and manufacture each plant part on its own, supplies optimum assurance. It is just as they say: "The left hand knows exactly what the right hand is doing."

How do you coordinate this objective?

Kurt Sommer: This is done through the regular dialog with all involved parties. And also with the help of a firm project structure plan used by all involved employees. As soon as an order is received, a project plan is developed which documents each process step from the engineering to the shipping and makes each individual step traceable. This plan does not only include Siempelkamp services but also components supplied by the customer and the suppliers at the location. Thus, the plan provides a "big picture" in the form of optimal project monitoring and project control. It ensures our customers best possible reliability.

The interface management for such a large order requires concentrated coordination. Who is involved at this point?

Kurt Sommer: All involved Siempelkamp parties and the customer contacts are well networked. In some countries certain business rules require that this circle is expanded. In Eastern Europe, for example, each customer is obligated to involve a planning office. These offices become additional important interfaces accompanying the process from planning to shipping continuously. Partly, we communicate with these offices indirectly via the customer; partly, the communication takes place directly, for example, in the early design stages of the plant.

What are the usual communication channels?

Kurt Sommer: Internally, order books and project structure plans are an important written foundation. Otherwise, the communication mode during both the large project phases "development and design" and "installation" differs. During the first phase meetings with the customer and other involved parties, for example, the planning offices, take place regularly. These meetings are held at either the customer's location or at Siempelkamp. During the installation phase, the site manager and assemblers are permanently at the customer's location. The project manager, usually pulling all the strings in the background, may sometimes also travel to the customer's site for ongoing coordination.

What is the core qualification of a project manager?

Kurt Sommer: Most of our project managers are engineers. They find solutions for technical issues together with all involved parties. However, during such a project, commercial skills also play a decisive role for the project's implementation.

Is there an ideal process for Siempelkamp projects?

Kurt Sommer: As a rule, we work according to clearly structured project plans. Nevertheless, no project is like another. The before mentioned different regulations make it necessary to find a different approach for each individual project. In Eastern Europe the planning offices require a precisely tailored layout of our work. Other countries have very specific laws for product protections, customs regulations, and other details. Different cultural habits also contribute to the fact that no project proceeds like another!

What is the objective of the "big picture"?

Kurt Sommer: We aim at providing our customers with a smooth and quick project completion. In the end our objective is to start up a plant which will manufacture excellent products.

4 | Short-cycle press

Short-cycle press

One of two short-cycle presses

Unfinished board feed

Inline paper lay-up

Plate changing equipment

Paper storage